

# COAL AGE

The Only National Paper Devoted to Coal Mining and Coal Marketing

C. E. LESHER AND R. DAWSON HALL, *Editors.*

Volume 20

NEW YORK, THURSDAY, AUGUST 25, 1921

Number 8

## *Mine Wages and Economic Readjustment*

A POPULAR conception of the coal operators and the men who mine the coal has the coal "barons" constantly seeking to oppress the workingman, laboring in the dark and dirt of the mine at constant risk of his life, and has the miner, through his union—the strongest in the country—fighting for his life at every turn. As a matter of fact the men who own and manage the coal mines are individually just as close to their men as the employers in any other large industry, where the paid officials of the unions do not prohibit, and are in closer touch than many others where operations are in larger units. In their everyday relations and behind the closed doors of the scale-committee meetings it is "Jack" and "Tom," "Will" and "John," even with the leaders of the union. A vast number of the operators have risen from the ranks of the coal diggers and many of the miners have definite ambitions to be officials of coal companies, if not actual owners of mines. There is ample opportunity for understanding between the capital and labor interests in the coal industry.

Since the early 90's the operators and miners in the organized Central Competitive coal fields have been bargaining collectively with respect to wages. It is important to appreciate fully that in this period of more than twenty years the result of every meeting, save only that of 1904, has been advances to mine labor, in most instances general increases in wages. Not once have the miners been obliged to recede—and in this may be found the reason for the progress and strength of the United Mine Workers of America. That the miners since 1896 have each time gained in their bargaining with capital is no evidence of the weakness of the operators or of the public. From 1896 to 1920 was a period of gradual but continuous rise in commodity prices, and labor, whether or not a commodity, has followed the line of other prices.

But times have changed. The world is now entering a period of indeterminate length in which the general level of prices and of wages is falling. No hokus pokus of man-made unionism can withstand the downward pressure. No beneficent desires of coal operators to maintain wages at or near present levels will serve to prevent the onward push of economic forces. The leaders of the miners' union are extremely able and intelligent men, or they would not have attained their present positions. At the head of an organization of labor that has attained strength through years of winning, these men see possibility of disaster or disintegration in the prospect of losing, for it will be losing for them to take a reduction after their positive declarations for increases next spring. The diplomacy and generalship of these men is even now and will be taxed in the months and years to come, in a new era where by no chance can they fatten on

gains, but in which their constituents, the coal miners, may nevertheless live happily and comfortably on less than the present rates of pay.

The operators, on the other hand, having through a score of years become habituated to granting advances, are looking forward to the necessity of forcing a downward revision of wages. That the retreat in rates will be considerable is evident, but there will be no disposition to make it more than necessity requires. What equipment, what preparations have or are the operators likely to make looking to a proper adjudication when the time comes? Theirs is the burden of proof for the first time in twenty-odd years. The public is feverishly interested in coal miners' wages and earnings. The public is interested in the price of coal and is learning the intimate relationship between wages and the minimum price of coal. For four years there has not been a coal-mine wage contract negotiated except the public through the government has sat in as a third party. Has the old way passed out? And if the new way has or has not come, can we imagine the next wage negotiation being settled behind closed doors? The next decision will be reached by feeling out public opinion, and it takes a lot of ammunition to get results that way.

The operators have a Bureau of Coal Economics in their national association that can prepare the kind of data needed or can supervise its collection, but it is a bureau all dressed up but with no place to go. Most of the local operators' associations are equipped for this sort of work, but they, too, are tied to the post.

After the big strike in 1919 one group of operators came to bat with a semblance of big-league regalia, and Illinois is again ready in characteristic Western style for the next combat. It is all well and good to know "Tom" and "Bill" by their first names but it is well also to take a leaf from the immediate past in getting ready for the inevitable next open meeting on the question of coal miners' wages. The Illinois operators have recently adopted a standard form of record on which individual records will be kept of every mine employee with respect to such matters as rates of pay, semi-monthly earnings, payments to the union through the check-off, other deductions, and compensations. Such comprehensive and detailed data are costly, but the operators are determined to match strength with strength.

## *The Art of Simplicity*

EARLY one morning the special train of the American Institute of Mining Engineers—the Institute bore that title, we believe, in that earlier day—pulled up at a Kansas stripping. The guests clambered out of the cars into the tall grass, many leaving their morning meal in the diner to grow cold in their absence. A walk of a quarter of a mile through the

swampy meadow, and the crowd climbed up onto the berm of a strip pit.

The visitors looked down on one of those huge shovels which were making Kansas in that day a wonder and an inspiration to visitors from all parts of the United States. Lazily the big excavating machine was taking a shovel load such as a thousand men alone could lift with their puny hand shovels, was turning slowly round with it and dropping it 90 ft. away with a leisurely swing that suggested power and indifference.

A Japanese engineer—one of the many foreigners from Japan and China always to be found at such gatherings, who by their courtesy and willingness to be pleased and interested make themselves agreeable even despite their broken English—clambered with the others over the rude bank and remarked "How wonderfully simple are these American devices!" He did our American mining methods perhaps too much honor, for his hearers could not help thinking of our subterranean mines with their interminable gangways and multiplicity of rooms, with a man or two in each place—in fact with only one, as a rule, in the Middle West.

Surely these give but little evidence of the presence of the virtues of simplicity and system—mines full of man-power working perhaps a third of the shift, at best one-half, and waiting around the rest of the time wondering if the mine cars are coming or if a wreck, derailment or merely a piece of mismanagement was going to delay matters so much that it were best to hide the tools in the gob, put the oil or carbide in the box, pick up the dinner pail and go home. One might have recalled the places uncut and the loaders quitting, or the coal not loaded out, and cutters and scrapers deciding that there was no more work that day, or again the little crowd around the mine foreman waiting for him to provide for the bailing of a chamber or to view a clay spar and fix a price for its loading out.

Truly not all is simple around a coal bank. The simplicity of the strip pit, the system regulating its methods, the overwhelming power of a steam shovel are models for the underground mine where machinery has been so ineffectively used that it has too often added complication rather than simplified a task that in its nature is by no means involved. Some day we are going to earn for our underground mines the praise: "How wonderfully simple are these American devices!" Cutting machines will be followed by loading equipment along an extended face, and cars will come in trips to be loaded, and when filled will travel without stop to the tippie. Till then we shall continue to debate, What is the best size of hand shovel for loading coal, What is the bonum load, and How high should the car be for the most efficient hand shoveling? Motion studies will be made to ameliorate a bad system, whereas real progress can be attained only by a radical change in all our methods. Eventually we shall make our mines frankly mechanical and use on the coal only large, simple and leisurely machinery. In our present mines we use American hustle—and all to little purpose. All we can say is that at the mines of other countries they do not do even as well.

Many have hailed the prospect of loading all coal by machinery but the practice can be made a striking success only by operating these machines as are railroad excavators, namely, by continuously presenting them with trips or trains of empty cars or by letting them dump into a conveyor that will achieve a like result.

## All-Around Education

VITUPERATION has been the lot of the coal man in most localities in recent years and the first outbreaks are on the heads of the retail merchants because they are the direct and intimate contact with the ultimate consumer of coal in greatest number. It is not so much because the retail dealers have in most towns and cities their associations for mutual advantage that they are publicly condemned. It is by the fruits of these organizations they are judged. When the price of coal goes up the obvious inference is that the dealers have combined to put it there.

Indictment by the Grand Jury of Baltimore of members and officers of the Baltimore Coal Exchange, a body formed to regulate trade questions of inter-relations between retailers dealing in hard coal, appears to be the result of a campaign of misstatement in the local press. Charges of unfair prices and improper methods on the part of the members of the Exchange have figured largely in the situation. The attorney for one of the indicted coal men charges that the State's Attorney who directed the action before the Grand Jury repeatedly showed by his prior statements in the public press that he had prejudged the case. The indictment was brought under the common law providing against combinations in restraint of trade, because there is no city ordinance or state statute which prevented the operations of such an organization as the Baltimore Coal Exchange. Julius Hellweg, the veteran secretary of the Coal Exchange, appeared before the Grand Jury and laid the full operations of the body before the inquest, saying that the exchange had nothing to hide. He was exempted from indictment by the Grand Jury. As a matter of fact the whole affair looks like more or less of a tempest in a teapot, although the State's Attorney refused to waive the ordinary bail of \$500 per accused because he stated "the charges are so serious."

We do not gather that the indicted men in Baltimore have or had an association that operates more closely to the profit and loss account of its members than that described by the Indianapolis men before the annual convention of the National Retail Coal Merchants' Association at Richmond this spring, but we have not heard of the Indianapolis association getting into trouble. Perhaps the reason is that in the Western city the association does more than watch the trade practices of its members; it advertises its service to the consumer. It has sold the public the idea that this is one association concerned with giving the public a square deal. Putting a medal on the caps of the truck drivers and on the equipment not only tells the passing public that the owner of the truck believes in a square deal, but it acts as reminder to the employee, just as plastering "CIVILITY" on the sides of the Fifth Avenue buses in New York promotes that thought in the conductor and chauffeur.

Retail coal merchants are an essential part of the business organization of every community, but they are too generally blind to the quasi-public nature of their business. In so far as they fail to establish proper relations with the public it is incumbent on the producer and distributor to go over their heads to the people. The Baltimore dealers may be victims of circumstance, but more likely their predicament is the result of their failure to lay their cards on the table before the public before they were called on to show them to the Grand Jury.



# Lining a Shaft with Concrete and Guniting Without Interfering with Operation

Concrete Machine-Mixed and Lowered on Cage in Wheelbarrows—  
During Part of Guniting Operation Gun Was Located on the Surface  
And During the Rest of the Work Operated in the Upper Coal Bed

By R. H. GILLESPIE\*  
Allentown, Pa.

SOMEWHAT unusual methods were employed recently in the construction of a permanent self-supporting lining in the hoisting shaft of No. 1 mine of the Lake Superior Coal Co. at Superior, W. Va. The sinking of this shaft began in 1906 and was completed, including the placing of the timber lining, as far as the Pocahontas No. 4 bed—185 ft. below the surface—in December of that year. Early in the autumn of 1910 it became desirable to increase the depth of the shaft so that the Pocahontas No. 3 seam of coal, lying 240 ft. below the surface at this point, might be available for mining.

Although the Lake Superior Coal Co. still has a large acreage of coal in the upper measure, little mining has been done in the No. 4 bed for a number of years, all operations being confined to the lower measure. However, in lining the shaft throughout its entire length with concrete, it was necessary to make ample provision for the future mining of the upper bed.

## LANDSLIDE DISCHARGES ROCK INTO SHAFT

For a distance of 45 ft. from the surface the shaft was sunk through earth, clay and loose rock, the remaining distance to the bottom being through hard rock bearing a considerable amount of water. In March, 1914, a serious landslide occurred, coming from the north, or uphill, side of the shaft. This closed down the mine for more than a month. During this time the material that slid into the shaft opening was removed and the timber lining repaired. One of the chief items of repair consisted in filling up in the rear of the shaft a large cavity made by the moving earth. This opening extended northward into the hillside a distance of 20 ft. from the shaft collar and was approximately 35 ft. in depth. More than three carloads of green round timber were used in the building of cribs adjacent to the shaft lining on the north side. This structure was then packed and the remainder of the cavity filled with loose earth.

The inside dimensions of the original shaft with its timber lining were 14 x 20 ft., space being provided for two cage compartments and a pipe gallery. During the summer of 1919 the condition of the old timber lining became such as to make extensive repairs, or the substitution of a new lining, imperative. The Superior company accordingly entered into a contract with the Traylor-Dewey Contracting Co., of Allentown, Pa., for the installation of a reinforced-concrete lining in the upper portion of the shaft and a self-supporting and reinforced guniting from the concrete to the shaft bottom.

Work on relining the shaft was begun about Oct. 1, 1919, and carried on continuously, except for a few in-

terruptions arising from slow delivery of materials. It was completed early in January of 1920 the work was performed without interfering at any time with the operation of the mine. The new construction work was done at night, the shaft being utilized for hoisting during the day.

The concrete lining in the upper section of the shaft was placed first. A shelf was excavated in the solid rock at a depth of 55 ft. to form the foundation for the concrete side walls. The work was attacked in sections, the advance being limited in each case to the distance between a pair of range timbers. All the old timber lagging and vertical posts in that section were removed and trench braces were employed temporarily to take the place of the posts withdrawn. Steel reinforcement consisting of 3-in. square corrugated bars was then placed.

The horizontal bars were spaced on 6-in. centers, while those extending vertically and serving merely as a means for spacing the horizontal members, were placed on 2-ft. centers. One-inch rough boards function-

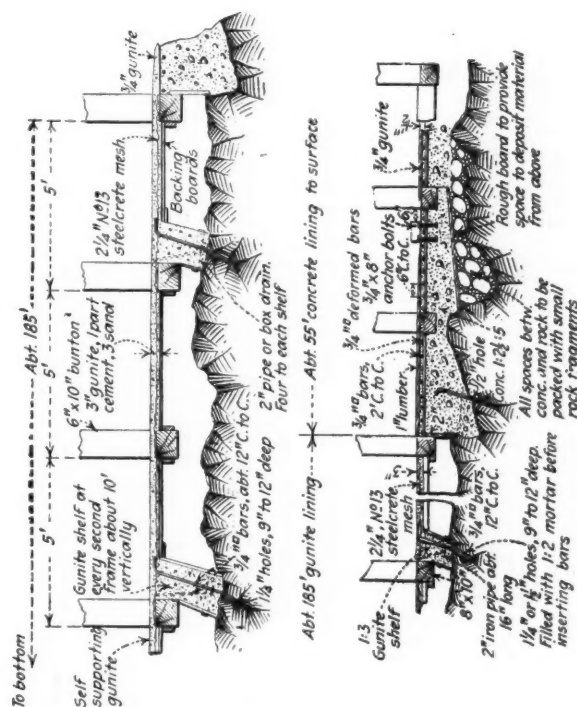


FIG. 1. SHAFT LINING OF CONCRETE AND GUNITING

On the left is shown the lower 185 ft. which is guniting. The 3-in. square bars in the guniting shelf, or ring, are bent alternately up and down. The section on the right shows the concrete lining in the upper part of the shaft where support of the sides is needed. It also shows at the bottom some of the guniting lining. Where the space permits a board is set as backing to the concrete, and the cavity back of the board is filled with rock fragments or other imperishable material as shown in the upper part of the section on the right. Where the concreting ended a footing was cut in the rock to support the lining above.

\*President, Traylor-Dewey Contracting Co.

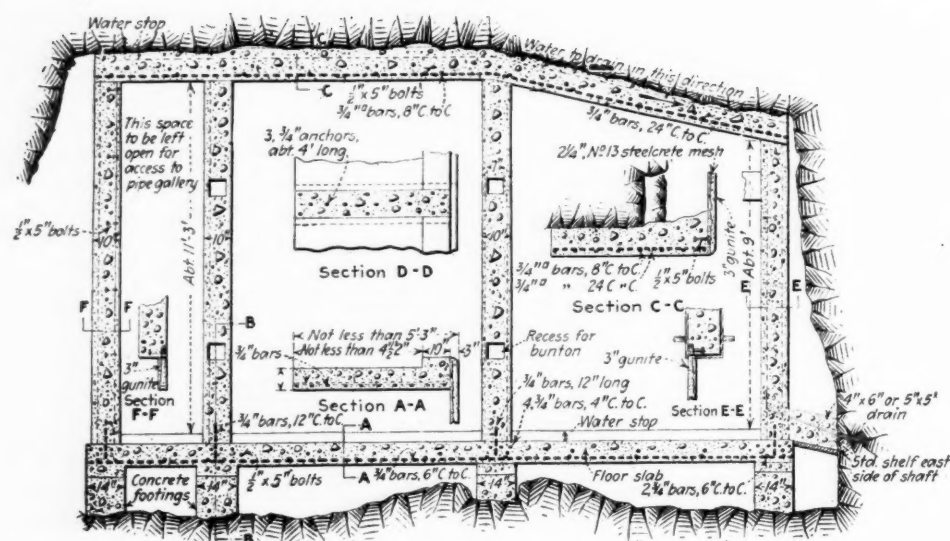


FIG. 2.

## North Portal

On north side of shaft looking north from shaft at 180-ft. level. The various footings and the floor slab were cast each in a single operation. Pier steel and forms were then placed, each pier constituting a monolith. Forms and steel were then placed for roof slab, which was cast integrally.

ing as face forms were then attached to the range timbers and the concrete—composed of a mixture of 1 part cement, 2½ parts sand and 5 parts broken stone—was lowered in barrows from a Ransome mixer at the top of the shaft and poured. In this latter operation care was taken to work the concrete well back into all the irregularities of the rock.

## CONCRETE BUILT UP IN FIVE-FOOT SECTIONS

In this manner the concrete walls were carried up in sections 5 ft. in height, the range timbers being removed as the concrete was brought up to them. In order that the bottom of the face forms on succeeding sections might be held more firmly in position, heavy wires were cast into the upper portion of each concrete slab.

Rectangular wrought-iron plates, ½ in. thick, were bent to special shape and cast into the east wall at 5-ft. intervals to serve as supports for the cage guides. Back of each a hand-hole recess was formed in the concrete to permit of easy access when renewal of the guides became necessary. Each end of the buntion timbers was fitted with a 6 x 12-in. steel plate, 3 ft. long, bent and bolted to these members so as to form a 6 x 4½-in. projection which rested in the recesses provided in the concrete walls. The new buntions were installed as the walls were carried upward; being placed as a rule about 12 in. below the old buntions.

Throughout the portion of the shaft driven through the earth and loose rock all the old timber cribbing and packing that had been placed after the landslide

to serve as a footing to the hill slope was removed in advance by the men constructing the new walls. In its stead other material—mostly ashes—was used to fill the void. The removal of the old timber proved to be a particularly dirty, tedious and dangerous operation, as every kind of wood refuse was encountered, including many green logs and in some instances stumps of trees.

As soon as the concrete walls had risen above the firm rock rough back forms were provided so as to make the thickness of the walls not less than 10 in. When these walls were poured all space back of them was compactly filled with ashes. A coating of gunite, about 1-in. in thickness, was then shot over the inner concrete surface for the purpose of filling any voids that existed. In this manner the surface was thoroughly sealed and made waterproof.

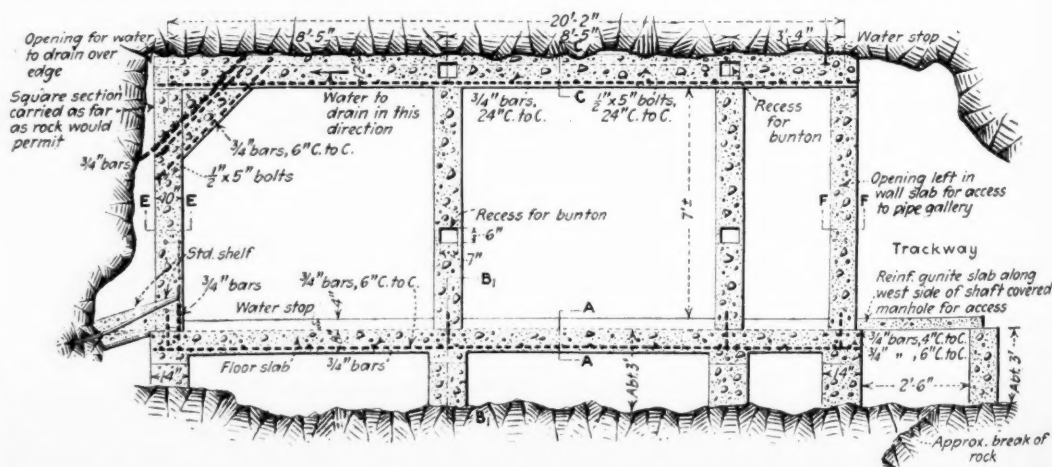
## GUNITE SHELVES AT TEN-FOOT INTERVALS

As has been already mentioned, the section of the shaft that had been sunk through the rock was lined with self-supporting reinforced gunite. The methods employed in this construction consisted of building at 10-ft. intervals, or immediately above every second range timber, a gunite shelf approximately 10-in. in thickness. This ledge was constructed on all four sides of the shaft. The work was accomplished by drilling 1½-in. holes in the rock at horizontal intervals of about 1-ft., into which were grouted ¾-in. square corrugated bars, bent and hooked in such a manner as most efficiently to take up the tension and engage the reinforce-

FIG. 3.

## South Portal

At 180-ft. level, on south side of shaft looking south from shaft. On left is shown appearance where rock permits square construction and the concreting method where the rock follows the heavy dotted line. For cross-sections and erection methods see Fig. 2.





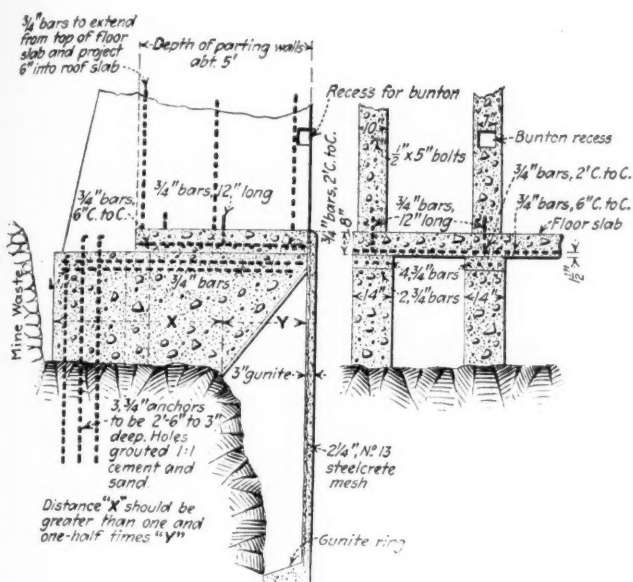


FIG. 4. SECTION B-B IN FIGS. 2 AND 3

This illustration shows how the portals are brought out to the edge of the shaft and are bedded with anchors to the rock at the shaft side; also how the gunite of that part of the shaft below the 180-ft. level is hung as a curtain from the portal and is sustained by a gunite ring or shelf.

ment in the gunite slabs that were to be constructed later.

Rough shooting forms were then placed and the shelves shot with a cement gun. The faces of the shelves were left rough and about 2½ in. in rear of that of the finished lining. In providing for drainage, an opening was formed in each shelf on each of the four sides of the shaft by casting in a short piece of 3-in. pipe or a wooden box 4-in. square.

#### WHERE ROCK WAS BROKEN BRACKETS WERE BUILT

When rock was encountered that had been shattered so far back from the finished lining as to make this type of shelf construction impractical, heavy brackets were cast. These were generally of concrete and thoroughly anchored to the rock by means of ¾-in. corrugated bars that had been previously grouted into holes drilled for that purpose. From bracket to bracket a reinforced-gunite beam was formed. This, as a rule, was about 10-in. wide and of varying depth, depending on the length of the span. Into the inner face of the beam ½ x 5-in. machine bolts were cast with heads projecting 1 in. to permit of fastening the reinforcement of the lining slab.

All wooden posts were then removed so that the range timbers were supported by the 1-in. material used for backing during the shooting operation. Forms were placed for gunite posts at the bunton ends and at the center of the east side of the shaft; the latter to provide a body of gunite within which the iron guide supports could be embedded. Where the posts intersected the range timbers 4 in. was cut away from their back so that the posts would be continuous from shelf to shelf. The thinner sections of the posts or the points where they crossed the range timbers were reinforced with ¾-in. steel bars.

#### EXPANDED METAL REINFORCES GUNITE LINING

Backing or shooting forms were made of rough 1-in. lumber nailed to cleats attached to the range timbers or wedged against the gunite shelving. These boards were

spaced from 6 to 12 in. apart and covered with tar paper. No. 13 expanded metal or "steelcrete," which formed the reinforcing for the slabs, was then put in place and securely fastened to the bar or bolt anchors already mentioned.

The gunite slabs then were shot to a finished thickness of 3 in. with the cement gun operating under an air pressure of from 30 to 50 lb. per square inch. The gunite was composed of one part cement and three parts of well-screened sand. As in the case of the concrete lining, recesses were formed in the gunite for all bunton supports, as well as hand holes at all guide fastenings along the east side of the shaft.

#### FOOTING PIERS BUILT OUT FROM NO. 4 BED

Where the shaft intersected the No. 4 bed—180 ft. below the surface—four concrete footing piers, each 14 in. wide and extending from 4 to 7 ft. from the shaft line into the heading, were constructed on each side of the shaft. As these piers had to be cantilevered beyond the edges of the rock in order to reach the shaft lines, they were heavily reinforced in their top sections and anchored to the floor with steel bars set deep in the rock. On these piers a reinforced-concrete landing slab 8 in. thick was constructed. Superimposed on the slab and directly over the cantilevered footing piers, concrete piers 10 in. in thickness and extending from the shaft line into the heading from 4 to 6-ft. were built.

The piers support a reinforced-concrete roof slab which serves both to hold up the roof at the shaft and the gunite lining at the top of the portals. In order that this type of construction might be the more easily

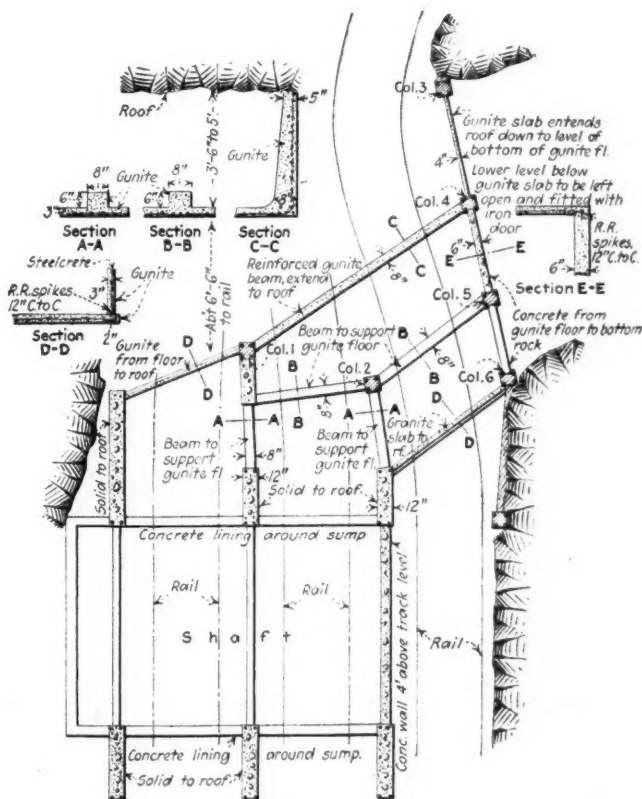


FIG. 5. OVERCAST RECEIVING AIR FROM HEADING ON RIGHT AND DELIVERING IT TO SHAFT ABOVE PORTAL

All columns are 12 in. square and extend from track to roof except those numbered 5 and 6, which extend to gunite floor only. The steel bars in the columns extend 6 in. into the rock bottom.

carried out,  $\frac{1}{2}$  x 5-in. anchor bolts were cast in place with heads projecting, to which was fastened the expanded-metal lining reinforcement. This means of support for the lining likewise is provided in the face of the end piers and the landing slabs. Cut-off walls were constructed at the back of the landing slabs; these extended down to the rock floor to prevent mine waste from falling down the shaft and behind the lining. Upon removing the forms from the reinforced concrete, all accessible surfaces were sealed off with a thin coating of gunite.

Where the shaft intersected the No. 3 bed—240 ft. below the surface—concrete was built from the mine floor to the roof as in the bed above. In this instance, however, the gunite shaft lining terminated 10 ft. above the roof, as the last 10 ft. of the shaft was lined with a concrete wall. This lower section was constructed in the same manner as the wall near the surface, except that the reinforcing rods which were used in the upper sections were in this case omitted.

#### WATER CONDUCTED FREELY BEHIND LINING

When the relining work was started the shaft was extremely wet, particularly the upper 50 ft. of its length. After the work had been completed no water was to be found inside the lining excepting that resulting from leaking steam pipes and from condensation. All the water reaching the shaft was drained from shelf to shelf and finally led from the lowest shelf through a pipe to a sump where pumps were located.

The intake air current of this mine passes down an airshaft and after circulating through the workings returns through a crosscut leading directly to the hoist. In the past no definite steps had been taken to prevent this flow of gas-laden air from coming in contact with the wires serving the electric locomotives. At the bottom of the shaft an overcast was constructed to permit the return air to pass to and up the hoist shaft in such a way as to avoid touching the electric wires furnishing power for the operation of the mine.

At the north side of the shaft bottom and opposite the entrance of the crosscut mentioned, six concrete columns each 12-in. square were constructed in such locations as not to interfere with the mine tracks and car clearances. On these columns, together with the piers supporting the north side of the shaft lining, reinforced-gunite beams were built. These in turn supported a reinforced-gunite floor 3-in. in thickness at such a height above the floor of the mine as to give a clearance of 6 ft. 6 in. over the tracks, leaving a height of from 3½ to 5 ft. between overcast floor slab and mine roof.

The lower half of the crosscut was shut off by the construction of a concrete wall extending from the track level to the floor of the overcast, so that the space above that floor could be utilized for the admission of the air. An opening was left in the wall for access; this was fitted with a large plate door. The balance of the overcast was then enclosed by gunite walls extending from the floor to the roof, with the single exception of the shaft side. Thus the gas-laden air passes by way of an overcast to the hoisting shaft.

#### LINED 135 LINEAL FT. WITH GUN ON SURFACE

While sinking to a depth of 135 ft. from the ground level the cement gun was located on the surface, only the nozzle being in the shaft. For the remainder of the work the gun was moved down to the landing at

the No. 4 bed, being supplied with cement and sand lowered on the cage.

It is believed that the old range timbers left in place will rot and in time fall to the shelf below. As this distance, however, will in no case be as great as 10 ft., no damage is expected. Because of the nature of the work and the difficulties and hazard encountered, progress was necessarily slow. Practically all of the work had to be done from the cage and as its floor dimensions were but 7 x 12 ft., it was only in rare instances that more than four men could be employed to advantage simultaneously.

#### Bureau of Mines and Carnegie Tech. Study Constitution of Coal and Corrosion

UNDER a co-operative agreement with the U. S. Bureau of Mines, work on fellowship problems on the "Constitution of Coal" and "Acid-Resisting Equipment for Use in Coal Mines" has just been begun at the Carnegie Institute of Technology, Pittsburgh, Pa.

The research work on the constitution of coal will consist especially of the microscopic study of the Freeport coal bed with a view to the economic utilization of the bone and cannel coal constituents. This problem will be undertaken by A. W. Voorhees, who holds the degrees of B. Sc. from Rutgers College and M. S. in geology from Princeton University. Mr. Voorhees, as a research fellow at the Idaho School of Mines in 1920, worked on flotation problems in the Cœur d'Aléne region. In his collegiate work he specialized in chemistry, economic geology and petrology, and did special work on the preparation of thin sections.

The problem on acid-resisting equipment for use in coal mines will include the collection of samples of mine water from various bituminous coal mines and the determination of the degree of acidity; a survey of the acid-resisting materials available for use in coal mines, and tests on the acid-resisting materials selected on the basis of this survey. This problem will be undertaken by George M. Enos, who holds the degree of B. S. in metallurgical engineering from the South Dakota School of Mines. Mr. Enos acted as analytical assistant at the mining experiment station of the South Dakota School of Mines in 1920, and has contributed a paper on "A Volumetric Method for the Determination of Tungsten" to the technical press.

#### Suffolk Quicksand Menaces a Dunmore Mine

CHIEF of Mines Seward E. Button, of the Department of Mines, Pennsylvania, acting upon the complaint of the Pennsylvania Coal Co., Dunmore, that the mining methods of the Suffolk Coal Co., whose property adjoins that of the complainant, will result in letting water and quicksand into the workings of the Pennsylvania company, has appointed a commission to investigate and make a report. On the commission are Inspectors Augustus McDade, 7th district, in which the two companies are located; Frank Kittle, 13th district, and Joseph Walsh, 14th district.

A preliminary inspection has been completed and the inspectors have within the past week held a conference with Chief Button, who sent the commission back to the mines for a further investigation. A report is also expected soon from the commission which was named to investigate conditions at Lansford.

A second edition of the reprints of three articles by Dr. H. M. Payne on Tidewater Coal Pools, appearing in COAL AGE in March of this year, is now ready for distribution.



## Guarding Transformers and Rotaries from Overload and Entire Installation from Lightning and Surges\*

Fuses on Transformers—Where to Place Fuse Cutouts—Bad Rail Bonds Cause Armature Burnouts—How to Test Bonds—Testing Overspeed Devices—Four Lightning and Surge Arresters and Their Advantages

By B. F. GRIMM†  
Fairmont, W. Va.

**I**N MANY instances transformer fuses of improper size are installed. It is often argued by those who make such installations that when fuses of proper size are put in place they will not hold and consequently are no good. In many instances the capacity of the fuses is so much increased that when short-circuits occur on the load side of the transformer the fuses do not blow, and as a result this piece of equipment is burned out. It is not always possible to employ fuses corresponding to the current rating of the transformers, but those of the lowest rating capable of carrying the load under normal conditions should be used.

Where motors and other equipment requiring high starting current are connected to the load side of a transformer it is necessary to use fuses rated higher than would be employed for plain lighting service. If at all possible fuses rated according to the recommendations of the transformer manufacturers should be employed. In installing pole-type transformers it has been found convenient to place the porcelain fuse cut-

outs on the end of the bottom cross arm, making this arm of the same length as the one at the top. With this arrangement fuses can be replaced without danger. Choke coils are made and suspended between the bottom and top cross arms, and lightning arresters are installed on the top arm.

### COPPER FUSES BETTER THAN LEAD OR ALUMINUM

Where open wire fuses are used on horn gaps it has been found that copper wire gives better service than those made of either lead or aluminum, with either of which an electrolytic action is set up between the dissimilar metals. When tightening down the setscrews either lead or aluminum wires are damaged more easily than copper. One large copper wire is better than two small ones, as it has more mechanical strength. There are now on the market fuse wires inclosed in glass tubes to protect them from impurities in the atmosphere; heavy copper terminals are provided. My company has tried out a few of these and they have been found to yield highly satisfactory results.

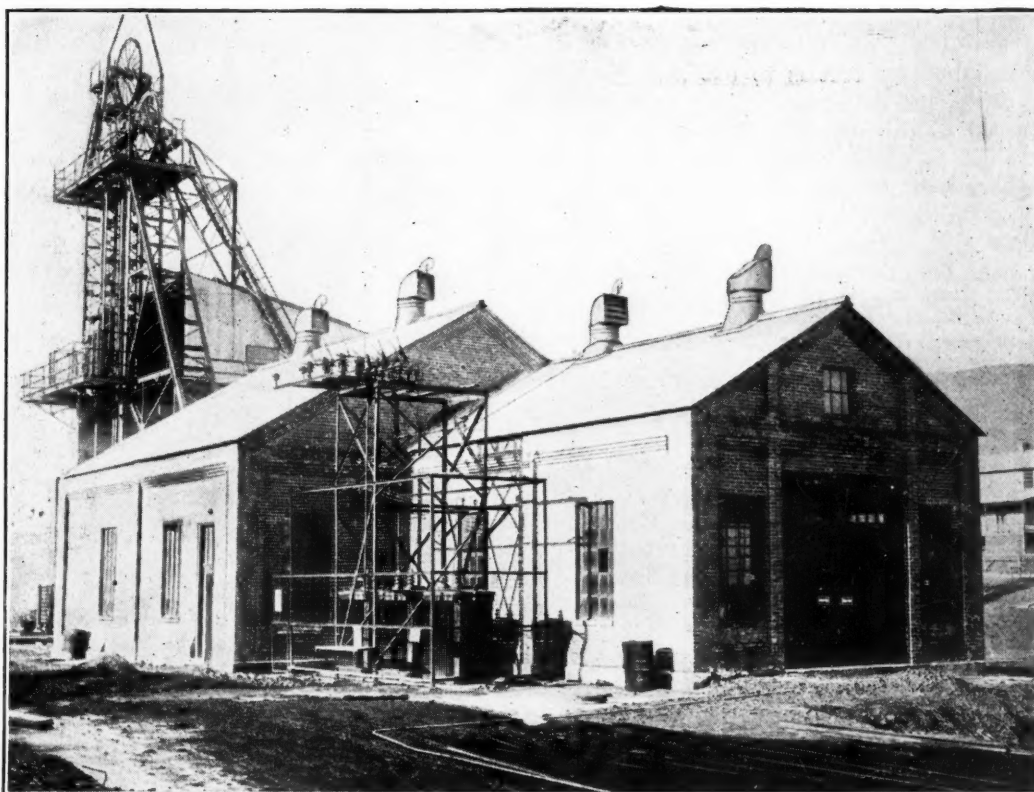
A frequent cause of armature burnouts is low voltage as the result of inadequate track bonding and poor joints in feeder wires. Frequent voltage readings should be taken at all working places in the mine. A convenient and rapid method of locating lengths of

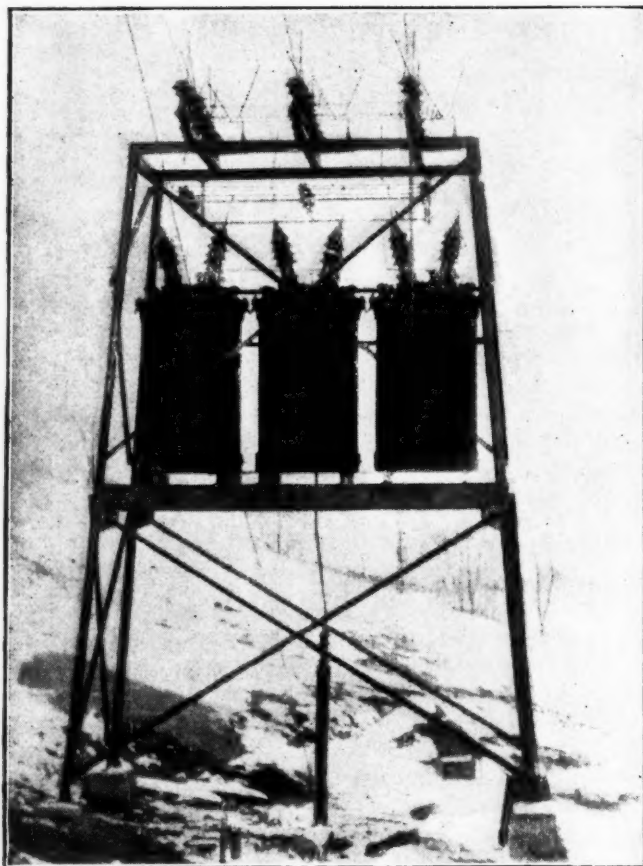
\*Second installment of article read before the West Virginia Coal Mining Institute at its Fairmont meeting, June 7, 1921, and entitled "Protection of Electric Equipment in Coal Mining Service." The first installment appeared last week and was entitled "How to Guard Electric Equipment by Fuses, Starting Devices, Independent and Tie Circuit Breakers."

†Superintendent, Power and Mechanical Department, West Virginia Division, The Consolidation Coal Co.

### Lightning Arresters at Shaft Station

These are horn-gap arresters which in this case protect three 250 kva. transformers stationed below them, which step down the current from 22,000 to 2,200 volts and furnish power to a motor-generator set supplying direct current for a 1,400 hp., direct-current hoist motor. This is one of the plants of the Consolidation Coal Co.





HORN-GAP ARRESTERS PROTECT BANK OF 50 KVA.  
22,000/2,200 VOLT TRANSFORMERS

The 2,200-volt alternating current passes through a borehole to a rotary converter installed inside the mine.

improperly or inadequately bonded track is to measure the voltage drop on 1,000 joints of track, using suitable portable resistance or other equipment which will draw sufficient current to cause an appreciable voltage drop on the section of track being tested.

The method employed by the Consolidation Coal Co. in making this test is to use a haulage locomotive to draw the desired current. Either a loaded trip can be coupled to this machine or the brakes can be set so that the desired current will be consumed. Simultaneous voltage and current readings are taken. If a voltage drop on the track is discovered arising from other loads in the mine such as mining machines, pumps and the like, this voltage reading is deducted from that taken while the locomotive is in motion.

#### ROTARY CONVERTER MUST BE WELL PROTECTED

Three causes of serious burnouts of rotary converter armatures have been: Failure of overspeed devices, bearing burnouts and operation on single phase. To lessen the likelihood of failure of overspeed devices weekly tests should be made upon them. Of course, these devices are required only at installations where two or more rotary converters operate simultaneously. The necessary test can be easily made by tripping the oil circuit breaker on the alternating-current side of the machine and letting it continue to run from the direct-current side, weakening the field if necessary to cause overspeeding.

Such devices usually are arranged to operate at 15 per cent above normal. If the overspeed device fails to trip the direct-current circuit breakers at the proper speed, the necessary adjustments should be made either

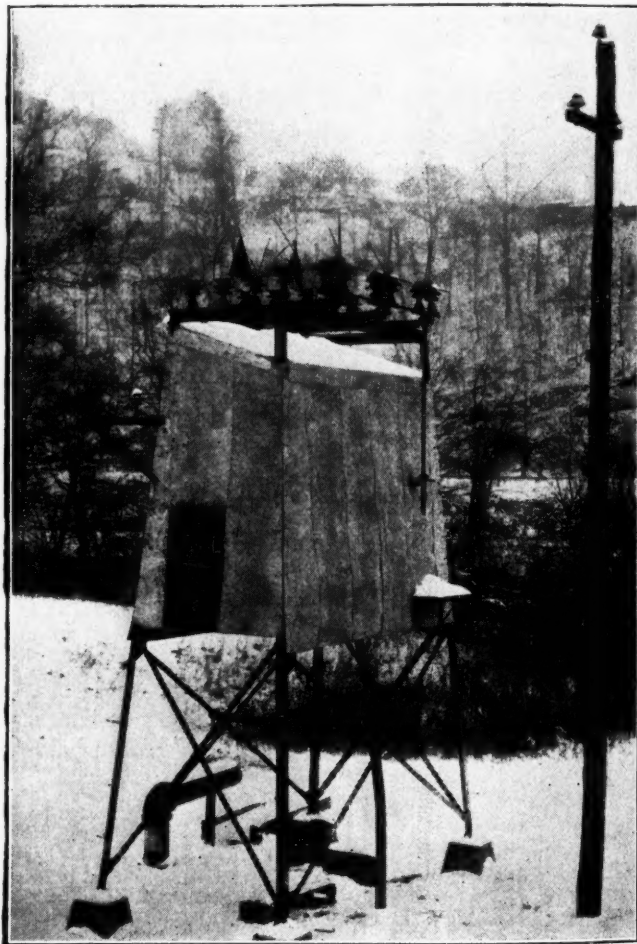
upon the overspeed switch of the rotary converter or upon the direct-current circuit breaker.

To prevent bearing burnouts use an oil of proper grade, which should be changed often enough to suit the operating conditions. Bearing thermostat relays are considered a good investment. To prevent the possibility that the rotary converter will run on single phase owing to line trouble, and that it may continue to run for a length of time sufficient to overheat the armature, inverse time or thermal relays should be installed.

#### FOUR LIGHTNING AND SURGE ARRESTERS

To protect the insulation of machinery and transmission lines from damage by lightning, arresters must be provided. These should be capable of conducting to the ground the excessive energy arising from lightning or surges. Space will not permit a complete description of all types of these devices, but a brief delineation will be given of some of the best-known varieties now in use. These include the electrolytic, oxide-film, horn-gap and liquid-rheostat types.

Electrolytic lightning arresters consist of a series of aluminum trays stacked up inside an iron tank. Each tray is partly filled with the electrolyte, the remaining space being filled with oil to prevent evaporation. One cell is provided for each 250 to 280 volts of normal line potential. Each single-phase set of trays is con-



STEEL TOWER CONTAINING TRANSFORMERS PROTECTED BY HORN-GAP SWITCH AND LIGHTNING ARRESTER

The transformers are of the indoor type and consequently are covered by sheet iron at the sides and above. The secondaries of the transformers are connected to a three-conductor lead-covered steel-armored cable leading through a borehole to a pump inside the mine, the discharge pipe of which can be seen under the tower.



nected to a line wire through an air gap. This gap should be shorted every few days, causing the arresters to discharge and build up an insulating film on each tray. When high voltage occurs on the line the air gap is jumped and the current breaks through the insulating film on the trays. When normal potential is restored, the insulating film prevents further discharge of current.

Arresters should be thoroughly overhauled once each year. Experience shows that a certain amount of rust accumulates on the inside of the iron tanks even though they be filled with oil. Some of this rust has been found in the trays. The Consolidation Coal Co., when it made its spring overhauling, painted the inside of the tanks with shellac. It is hoped that this will prevent further rusting.

#### HORN-GAP ARRESTERS CHEAP BUT EFFICIENT

The cheapest form of lightning arrester is the horn gap, yet the results it gives are quite satisfactory. The arresters consist of an air horn gap connected to the ground. A suitable resistance in series with the air gap often is provided. This allows current to be discharged to the ground when high voltages come upon the line. When normal line voltage is restored the resistance is sufficient to help cut down the flow of current. The discharge is interrupted also by the arc following up the horns of the air gap.

An auxiliary air horn gap often is provided which allows discharge to go to the ground in case the resistance becomes broken or in case of insufficient capacity of the resistance elements. The air gaps connected to the lines should be made small. In fact they should be just large enough to prevent discharges from being too numerous. Frequent inspections should be made of the resistance elements.

The Bennett surge arrester consists of a tank filled with water with a tube extending from the top down through the middle to a point near the bottom. An

electrode extends through the cover and makes contact with the surface of the water within the tube. The line wire connects to an air gap in series with the top electrode.

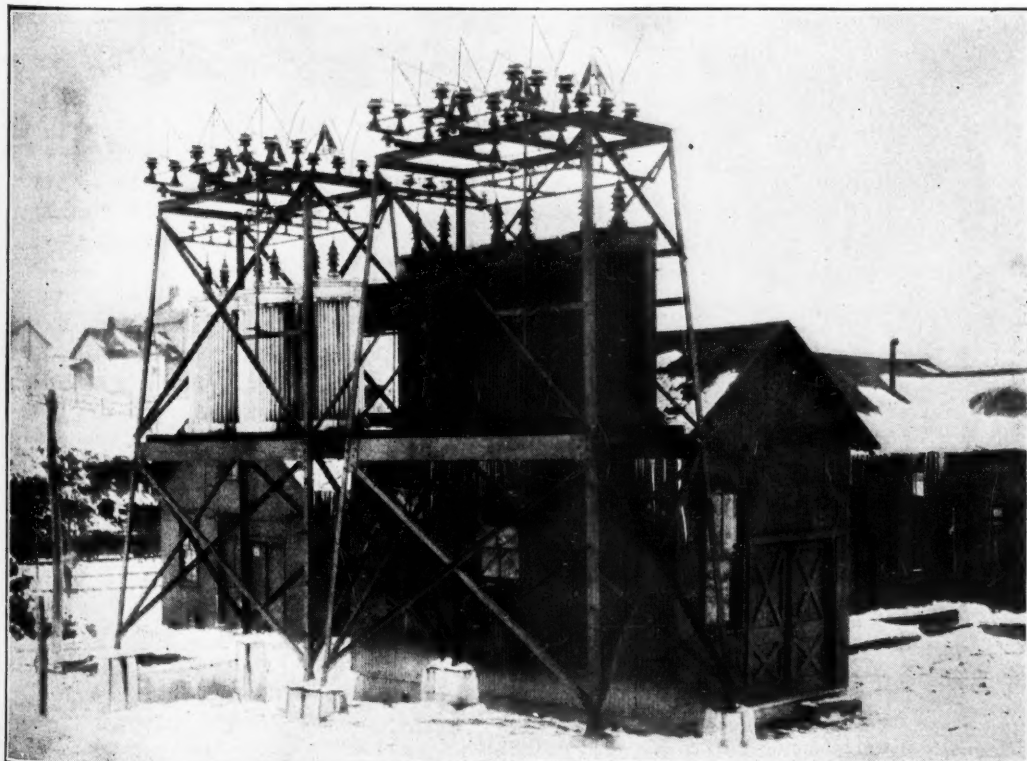
In case of high voltage on the line, due either to a switching surge or to lightning, the current jumps across the air gap and discharges into the water in the tank. As a result steam is generated, and the level of the liquid in the middle tube is forced down until the water is separated from the top electrode a sufficient distance to extinguish the arc.

Discharge is interrupted also by an arc following up the horns of the air gap connected to the line wire. The conductivity of the water should be sufficient to draw enough current to cause an arc to travel up the air gap horns a distance of three or four inches when they are "shorted" with normal line voltage. If necessary a small quantity of salt may be added to the water. The width of the horn gaps should be adjusted to the lowest value that will prevent slight surges from causing a discharge but should be made such as will allow all dangerous surges to arc over.

Provision must be made to prevent the water from freezing in cold weather, and to this end heating coils can be furnished with these arresters. It is necessary that suitable voltage be provided for the energizing of these coils. In some instances additional transformers must be installed to supply energy of the correct potential to the heating coils.

#### PROTECT OIL CIRCUIT BREAKER BUSHINGS

At the Hutchinson central substation of the Consolidation Coal Co. much trouble has been experienced from the breakage of oil circuit breaker bushings during line disturbances on its four main circuits. When a "short" would occur on one line and the oil circuit breaker would trip out, a switching surge on the common high-tension bus would cause a bushing failure on the bus side of one of the oil circuit breakers connected



#### Two Banks of Transformers

Both have horn-gap lightning arresters. One bank of transformers steps the current down for use of rotary converters, the other bank reduces the voltage of the current to supply a 2,200-volt service. The transformers are of the outdoor type.

to the common bus. This would sometimes happen to the breaker that opened and sometimes to one adjoining it. After a careful study of the causes of the bushing failures, it was decided to try out Bennett surge arresters. These were connected to the common 22,000-volt bus to which the four oil circuit breakers are connected.

A short time after these arresters were installed another bushing failed on the bus side of one of the oil circuit breakers. The connections were traced out and it was found that this bushing was connected to a high-tension bus which was in turn connected to a Bennett surge arrester element having a weak salt solution. This arrester element was directly under the 22,000-volt buses, and the solution had been left weak while the arresters were being tried out, as it was feared that this element might draw such a heavy arc that it would hold on long enough to be carried into the 22,000-volt buses.

After this bushing failure the strength of the solution was increased. Since that time there have been no more bushing failures, although several highly electrical storms have occurred accompanied by heavy line disturbances. The arresters were installed Feb. 20, 1921, and the first bushing failure occurred about April 16, 1921. Although during the present trial period heavy line disturbances have been experienced, the test has not been of sufficient duration to prove that the devices installed are adequate to prevent further bushing failures. The arresters are placed inside a brick building, where there is little danger that the water will freeze. It is the intention, however, to install electric heating elements before next winter.

Oxide-film arresters consist of stacks of flat wafer-shaped elements, each of which were rated at 300 volts. Each element consists of an annular porcelain ring filled with lead oxide. A metal plate is clamped to each side of the ring, its inner surface coming in contact with the lead oxide, while its outer surface is

coated with an insulating material. In series with each stack of elements is a sphere air gap connected to the line.

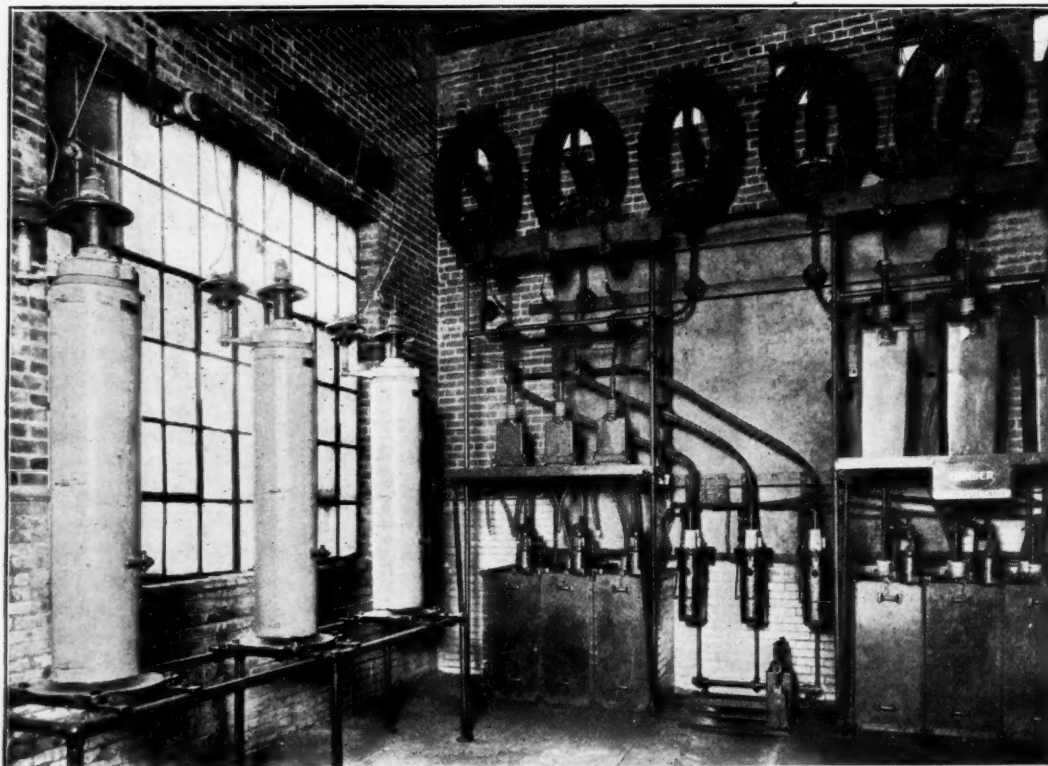
When high voltage breaks down the sphere gaps, the stacks of wafer-shaped elements have full line voltage impressed upon them. The insulating coating on the metal disks is punctured and current flows through the lead oxide. Red lead and litharge are formed and deposited on the surface of the metal plates. As red lead and litharge possess insulating qualities, the discharge is arrested by the time normal line voltage is restored. New punctures are made upon the next discharge. The arresters are fit for service so long as the surfaces of the disks have not, everywhere, been punctured.

The manufacturers state that this type of arrester has been in constant service for six years without any noticeable change in its effectiveness. It will be necessary, of course, to renew the disks in time, and a testing device is furnished with these arresters.

#### RELATIVE ADVANTAGES OF FOUR ARRESTER TYPES

The approximate relative prices of the above-mentioned lightning arresters for 22,000-volt three-phase service, which is the standard in the Fairmont fields, are as follows: Electrolytic, 100; oxide film, 95½; Bennett liquid type, 63; air horn gap with choke coils, 12.

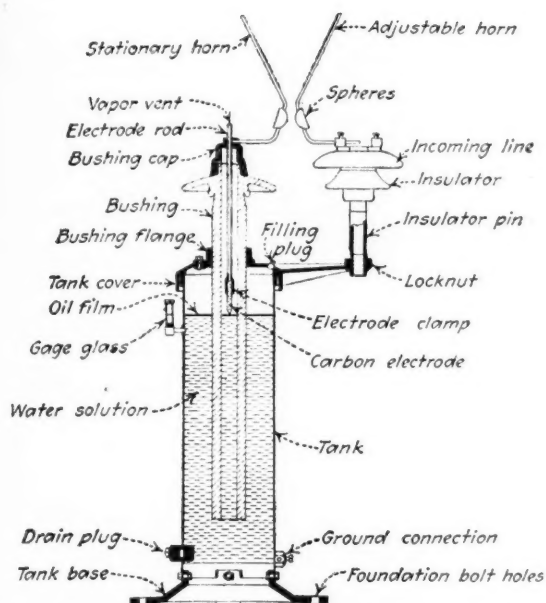
As the oxide-film arrester requires practically no attention it would seem that it could be used in more installations than can the electrolytic type. These, however, should be tested after each lightning season. This is a simple operation, requiring but little time. The oxide-film arrester should require less attention than the Bennett liquid type, which is subject to freezing. It is also necessary to inspect the water level of the latter type occasionally. A film of oil is kept on the surface of the water to prevent evaporation, but as steam is generated each time the arrester discharges, the water level is bound to fall even though slowly.



#### High-Tension Room

On the left will be seen three Bennett Surge Arresters, manufactured by the Electro Service Co., of Marietta, Ga. The arrester farthest in the rear-ground is directly under the 22,000-volt bus. Oil circuit breakers with current transformers for two outgoing circuits are to be seen in the rear of the room.





CROSS-SECTION OF BENNETT LIQUID SURGE ARRESTER

The current passing down the electrode rod to the carbon electrode reaches the water which it evaporates, thus cutting off the flow of current soon after its establishment. The condensation of the steam causes the water to return to its former level ready for any new surge of current.

As the air horn gap arrester is so much cheaper than any of the other types mentioned, it seems logical to use this variety on most installations. This arrester should be inspected at least once a week during the season of electrical storms. The Consolidation Coal Co. has one substation attendant who inspects after each lightning storm all arresters of this type installed in the substation of which he has charge. New resistance tubes are installed when necessary. The setting of the air gaps on these arresters gets out of adjustment occasionally, and the spacing of the gaps accordingly should be checked up at least once every year.

#### MINE TRACKS IMPROPER GROUND FOR ARRESTERS

Ground connections for all types of lightning arresters should receive careful attention. The ground wire should lead to the earth plate in the most direct path possible. The importance of having an adequate and permanent ground should not be overlooked. It is not considered safe to connect the ground side of a lightning arrester to mine tracks. Lightning discharges through such tracks might start serious fires.

In conclusion I wish to emphasize the importance of frequent inspections and tests of all protective devices. As stated above, it is often possible to create the conditions that the protective devices are intended to guard against. By imposing such conditions upon these devices their reliability of operation can be tested. It is much cheaper to try out the protective devices than it is to pay repair bills for electrical equipment and sustain heavy losses resulting from unnecessary shut-downs. Serious injuries to life may also be prevented by making proper inspections and adjustments to protective devices and equipment.

In practically all cases it is better for the mine electrician to occupy himself inspecting protective devices and the condition of equipment in general than to spend his time on actual repair work. By putting in the time on inspection that is usually spent in making repairs the cost of enough supplies to pay the electrician's salary can be saved. In addition to this there would be a big economy, for the equipment can be kept running.

## Death Rate Per Coal-Mine Employee Lower Than Ever in Great Britain

A COMPARISON of the following table with statistics of American accidents shows that accidents in Great Britain kill a low percentage of its mine workers, but as the British produce only a small quantity of coal per person employed the blood toll of the production is higher than ours—4.11 per million short tons against 3.50.

The statistics relating to the number of coal-mine workers in the United States in 1920 and in fact in 1919 have not yet been received, but the U. S. Geological Survey estimates the number at 775,000 persons. Estimating that 21.5762 per cent were surface workers, as in 1918, there should be 167,216 surface workers and 607,784 persons engaged underground. Taking these figures, the ratio of fatal accidents from firedamp and coal dust to 1,000 underground workers would be 0.2698; the ratio from falls of ground would be 1.8543; that from shaft accidents 0.0921; that from miscellaneous underground accidents 1.1846. The number of fatal accidents per one thousand underground workers would be 3.4008. The same fatalities for surface workers would be 1.1542 and for underground and surface workers conjointly 2.9161. All these numbers exceed those in Great Britain, as may be seen by comparing them with the bottom line of the table.

BRITISH FATAL ACCIDENTS PER THOUSAND PERSONS EMPLOYED AND PER MILLION TONS MINED, AS COMPARED WITH AMERICAN FIGURES

Decennial Period or Year Average	— Death-Rate from Accidents per 1,000 Employees —							Death-rate from accidents Under and Above Ground per One Million Short Tons of Output
	By Explosions of Firedamp or Coal Dust	By Falls of Roof and Sides	Shaft Accidents	Miscellaneous	From All Causes Underground	Employed Above Ground, From All Causes Above Ground	Employed Under and above Ground	
1873-1882..	0.65	1.12	0.32	0.47	2.57	0.92	2.24	6.63
1883-1892..	0.32	1.00	0.19	0.50	2.01	0.96	1.81	5.05
1893-1902..	0.18	0.76	0.13	0.45	1.52	0.83	1.39	4.20
1903-1912..	0.17	0.74	0.11	0.44	1.46	0.78	1.33	4.25
1913.....	0.51	0.68	0.11	0.44	1.74	0.79	1.55	5.19
1914.....	0.03	0.65	0.07	0.43	1.19	0.61	1.08	3.90
1915.....	0.05	0.80	0.08	0.52	1.55	0.65	1.36	4.38
1916.....	0.03	0.89	0.06	0.49	1.47	0.73	1.32	4.41
1917.....	0.02	0.89	0.08	0.50	1.50	0.74	1.34	4.71
1918.....	0.20	0.86	0.06	0.48	1.61	0.58	1.39	5.23
1919.....	0.03	0.62	0.05	0.36	1.06	0.47	0.94	4.17
1920.....	0.03	0.55	0.04	0.36	0.97	0.54	0.88	4.11
United States, 1920.....	0.27	1.85	0.09	1.18	3.40	1.15	2.92	3.50

## Took Nine Months to Find That Husband Died of Injury Incurred in Mine

GEORGE SHOTO died March 26, 1919, and nine months thereafter—that is, on Dec. 29, 1919—a claim petition was filed by his wife alleging that while the deceased was lifting a rock in a mine of the Lehigh & Wilkes-Barre Coal Co., on Feb. 25, 1919, he cut his finger, in consequence of which he subsequently died of blood poisoning.

The referee found from the uncontradicted evidence, and there has been no appeal from this finding, that at no time was there any report made to the defendant company of any injury sustained by the decedent while in the course of his employment on Feb. 25, 1919. At the hearing the medical attendant of the decedent was not called by the claimant but by the defendant company. The doctor testified that he had treated Shoto not for the company but for Shoto's own account. The testimony of this witness was that the primary cause of death was myocarditis and the secondary cause, axillary abscess and that the abscess could have come from many causes. Shoto had not complained to the witness of any cut or other injury to his finger.

Referee Beemer, of district No. 3, refused compensation to Eva Shoto, the decedent's wife, and Chairman Mackey on appeal dismissed the case, affirming the findings of fact and the conclusions of law.

# Anthraccoal: A New Domestic and Metallurgical Fuel Made By Coking Anthracite Fines with Coal-Tar Pitch\*

Heavier, Denser, Tougher, Stronger and Slower to Burn than Coke—  
Is Superior to Anthracite—Can Be Made Low in Ash and Sulphur—  
Seventeen Per Cent of Pitch Used—Coking Period is Seventeen Hours

BY DONALD MARKLE  
Hazleton, Pa.

**A**NTHRACOAL consists of small particles of anthracite in a matrix of practically pure carbon, derived from the distillation of coal-tar pitch or other suitable bitumen. It is a hard, dense, homogeneous mass, with a silvery luster and its color varies from silvery to grayish black. When pushed from the oven, it develops only partly the fingerlike structure of coke; but, unlike coke, it has a tendency to remain in blocky masses. When struck with a hammer or passed through crushing rolls, it breaks with an irregular fracture, similar to anthracite, but with very little fines. Due to its density, anthraccoal is harder, tougher, and stronger than coke.

The results of a test made by the blast-furnace department, of the Bethlehem Steel Co., on two barrels of anthraccoal are given in Table I.

Both the shatter tests and the hardness number indicate that anthraccoal is an extremely tough, hard material that is eminently fitted to resist rough handling, crushing, and abrasion. Anthraccoal can be made in a coke oven upon the same large scale as bituminous coke and can be produced with little greater expense; therefore it should prove a tremendous factor in utilizing the anthracite culm now going to waste. Its commercial development is the outcome of experiments, made in 1914, in the chemistry laboratory at Lehigh University. In the development of the process, the

services of W. H. Blauvelt, were obtained and through him the Semet-Solvay Co. became interested in the experiments.

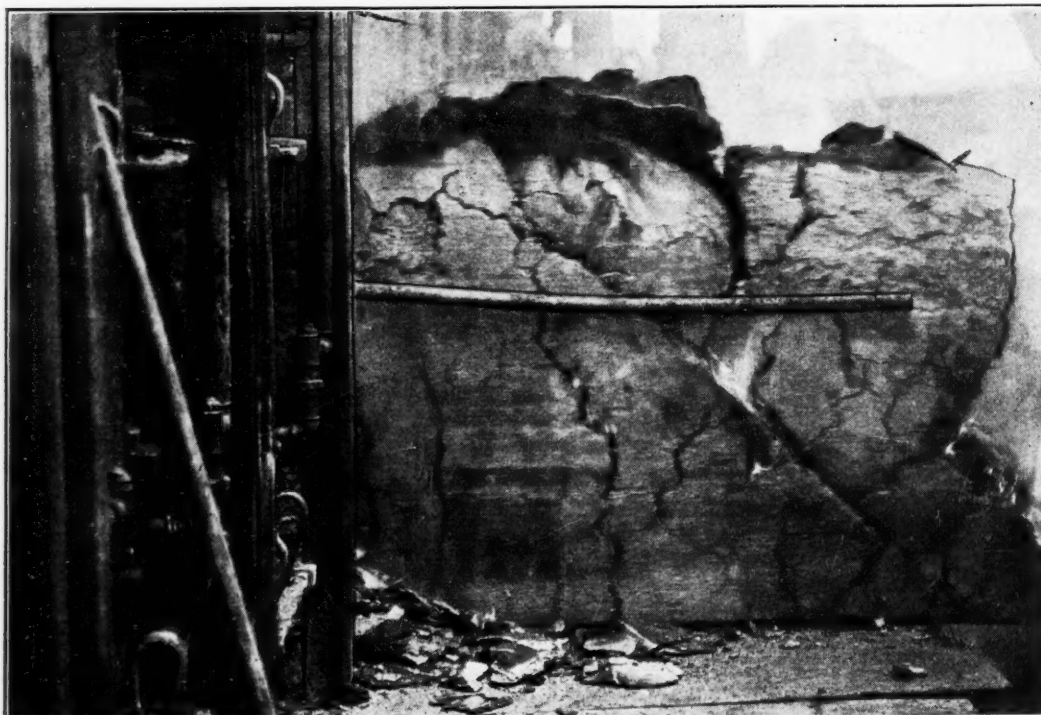
Inasmuch as the success of anthraccoal will depend not only on the large scale upon which it is manufactured but also on its salability, the tests at Syracuse were made to duplicate, as far as possible, actual commercial conditions. Although the apparatus was not designed for this purpose and the ovens were rather obsolete, sufficient anthraccoal was made on a large scale to indicate that the process is practicable and that the only difficulties are of a mechanical nature that can be remedied.

Anthraccoal has demonstrated, by tests and actual

TABLE I. RESULTS OF SHATTER TESTS ON ANTHRACOAL AND COKE

Test	Anthraccoal—		Good Blast-Furnace Coke
	First Barrel	Second Barrel	
Moisture, per cent. ....	0.77	0.76	Under 5, variation not over 3 points
Sieve Test:			
Through 2-in. screen, per cent. .	7.71	7.29	Under 40
Through 1-in. screen, per cent. .	1.37	1.56	
Through ½-in. screen, per cent. .	0.93	1.08	Under 8
Over 2-in. screen, per cent. ....	92.29	92.71	Over 60
Shatter Test:			
Through 2-in. screen, per cent. .	10.06	12.40	Under 16
Through 1-in. screen, per cent. .	2.66	2.06	
Through ½-in. screen, per cent. .	1.80	1.26	
Over 2-in. screen, per cent. ....			
Hardness number. ....	86.40	86.10	Over 81
Analysis:			
Ash, per cent. ....	16.64	16.48	Under 11
Sulphur, per cent. ....	1.17	1.10	Under 0.95
Volatile matter, per cent. ....	0.77	0.27	
Fixed carbon, per cent. ....	82.59	83.25	Over 87

\*Paper to be presented at Wilkes-Barre meeting of the American Institute of Mining and Metallurgical Engineers, Sept. 12.



## Anthraccoal

The new rival for anthracite made by coking a well-ground mixture of anthracite fines and coal-tar pitch. Exhibited here as pushed from oven. Though byproducts can be recovered they will hardly pay for the expense of recovery.



use, its excellent qualities as a domestic fuel. Several carloads of anthraccoal were shipped to different retail dealers, who reported that the customers were satisfied with the product and had no difficulty in burning it. Also, anthraccoal commanded the same price as the best anthracite, and the customers to whom it was sold asked for more.

TABLE II. ANALYSIS OF ANTHRACCOAL IN COKE OVENS AT SYRACUSE

Oven No.	Appar-ent Specific Gravity	True Specific Gravity	Porosity, per Cent	Volatile Matter, per Cent	Fixed Carbon, per Cent	Ash, per Cent	Sulphur, per Cent
7	1.046	1.717	39.2	1.35	79.85	18.18	1.11
10	1.124	1.896	40.8	3.23	76.13	20.64	1.15
13	1.015	1.649	38.5	2.65	80.00	17.35	1.15
22	1.004	1.636	38.7	2.90	77.94	19.16	1.16
38	1.044	1.696	38.5	2.22	79.23	18.55	1.06

Table 2 shows the analyses of anthraccoal made in different ovens from culm from the Loree breaker of the Hudson Coal Co., and are typical of the product. The apparent specific gravity is about 1.05, that of coke being about 0.84, showing that anthraccoal is heavier and denser than coke. The porosity is about 39.1 per cent, while that of coke is between 50 and 55 per cent. This accounts, in a large measure, for the greater length of time that anthraccoal burns, as compared to coke, unless the latter is carefully watched and burned on a bed of ashes. The fact that the domestic consumer does not know how to prevent coke from burning so quickly has prevented its competition with anthracite as a domestic fuel.

To demonstrate that the fuel may be greatly improved by reducing the ash in the culm, some culm received from the Lehigh Coal & Navigation Co., which ran 35 per cent was reduced to 9 per cent ash by the use of a Wilfley table. The anthraccoal produced from it gave the following analysis given in Table III.

TABLE III. ANALYSIS OF ANTHRACCOAL MADE FROM LEHIGH COAL & NAVIGATION CO. CLEANED CULM

Moisture, per cent.....	0.20	Sulphur, per cent.....	0.52
Volatile matter, per cent.....	1.41	Apparent specific gravity.....	1.101
Fixed carbon, per cent.....	89.99	True specific gravity.....	1.8
Ash, per cent.....	8.4	Cellular space, per cent.....	38.85
		B.t.u.'s per lb.....	13,334
	100.00		

By cleaning the culm a product results that is superior to anthracite and more than meets every requirement of the best byproduct coke. The sulphur is reduced from 1.15 per cent to 0.52 per cent, which is materially lower than the blast-furnace limit of 0.95 per cent and the ash is considerably lowered, thus meeting requirement for byproduct coke that the ash content shall be under 11 per cent.

Tables such as the Diester-Overstrom should be used to reduce the ash and sulphur in the culm. There is no reason why the ash cannot be commercially lowered to 10 or 12 per cent. This would produce a superior grade of anthraccoal, which could be sold at a premium, as the best grade of nut anthracite today rarely runs lower than 17 and 18 per cent ash, and often is as high as 22 per cent. Small particles of coal, carefully picked from the culm, contained from 2 to 3 per cent ash. Hence the inherent ash in the culm is about 2.5 per cent, showing that the limit to which the separation may be carried is about 3 per cent ash. However, while 3 per cent is the theoretical limit to which the separation may be carried, 7 or 9 per cent ash is a conservative figure and by careful preparation may be realized.

The process of manufacturing anthraccoal is comparatively simple; in fact, it is practically identical with manufacturing coke, except that a binder must be

added to the culm and the mixture well ground and mixed before coking. The culm is first dried and then placed in a hopper whence it runs upon a proportioning belt. Another proportioning belt, run at the same speed, carries the pitch. By the use of wires and the regulation of the openings, the amount of pitch and culm passing on to the belts are regulated to any desired proportion. The proportion, by weight, used successfully at Syracuse was 17 per cent pitch to 83 per cent culm. Both belts dump into the same bin, from which the mixture is run into a grinder where the culm and pitch are well ground and mixed but not pulverized. The mixture is then elevated from the grinding mill to the charging bins above the ovens. From this point on the process is identical with the coking of bituminous coal.

Depending on the market conditions, anthraccoal is sized to egg, stove, nut, pea, and breeze. Coke for domestic trade is sized and crushed in the same manner. For blast-furnace purposes, however, run-of-oven coke is used. This would be true also of anthraccoal used for metallurgical purposes. The breeze produced in crushing anthraccoal is less than that produced in crushing anthracite or coke. In a properly designed crushing and sizing plant, where anthraccoal will be made in the same sizes as anthracite, the breeze should not exceed 5 per cent.

#### SHORTEN TIME OF COKING WITH ANTHRACCOAL

The coking time of anthraccoal, compared with soft coal, is a most important factor, as any shortening in time increases the yield and decreases the cost per ton of manufacture. In the experiment at Syracuse, ovens of anthraccoal were pushed in 17 hr. against 19 hr. for bituminous coal under the same conditions. It is safe to assume that in a modern regenerative oven, where the heats are much greater, the coking time of anthraccoal will be 16 hr. against 18 hr. for bituminous coal.

The percentage of binder varies somewhat with the kind of pitch used, the character of the culm, and the method of mixing and grinding the material. In the tests at Syracuse, two grades of pitch were used, one with a melting point of 265 deg. F., and one 280 deg. F.; both worked well. The amount of pitch varied between 14.8 and 25 per cent, due to the method of proportioning. Ovens that contained 15 per cent pitch and 85 per cent culm, by weight, gave an excellent anthraccoal and pushed readily. Ovens that contained 25 per cent pitch and 75 per cent culm also gave an excellent anthraccoal but more of a thick carbon scale was noted in the ovens than when the mixture contained less pitch; also, the anthraccoal was more porous than that made from the 15 and 17 per cent mixtures. After many tests, both in the coke ovens and in the laboratory, it was found that between 16 and 17 per cent produced the best anthraccoal with minimum fines and scale. Using below 16 per cent pitch, the anthraccoal showed signs of attrition and not holding together, while above 17 per cent the surplus pitch flowed to the sides of the retort and produced a carbon scale that made much fine coke when pushed onto the dock.

The pitch used in the experiments, obtained from the Barrett company, was the product obtained in the byproduct coke industry after all the valuable constituents of the coal tar had been removed. It may be obtained in either lump or flake form. For these experiments, the flake form was used, as the flakes are little larger than the culm and hence could be

ground with the culm without previous preparation. Its analysis is as follows:

TABLE IV. PITCH USED FOR BINDING MATERIAL

Flake Pitch, No. 1		Flake Pitch, No. 2	
Melting point, degrees F.....	265	Melting point, degrees F.....	280
Moisture, per cent.....	0.11	Fixed carbon, per cent.....	46.64
Fixed carbon, per cent.....	44.55	Volatile matter, per cent.....	53.08
Volatile matter, per cent.....	54.39	Ash, per cent.....	0.28
Ash, per cent.....	0.95		

TABLE V. ANALYSES OF CULM USED IN MANUFACTURE OF ANTHRACOL

Volatile matter, per cent.....	6.96	6.51	6.52	7.42
Fixed carbon, per cent.....	73.49	74.22	77.85	69.6
Ash, per cent.....	19.55	19.27	15.63	22.98
	100.00	100.00	100.00	100.00
Sulphur, per cent.....			1.26	1.96

The average ash content of the culm used from the Loree breaker ran 18.96 per cent ash; the volatile matter ranged from 7.42 to 6.52 per cent. The sulphur varied from 1.26 to 2.5 per cent. All the culm used passed through a  $\frac{3}{4}$ -in. round-mesh screen and was taken from the fresh-mined side of Loree breaker, hence it was lower in ash than the regular run of culm, which contains about 35 to 40 per cent ash.

Many tests were made, both in the laboratory and in the ovens on a large scale, to learn the proper fineness of the pitch-culm mixture that would produce the best anthracol. The first ovens pushed were made from a mixture of culm-pitch that had not been ground. That is, the culm was in the same state of fineness as when received from the mines. The anthracol produced was hard, coarse, and had a bright silvery luster.

Each separate particle of culm could be readily seen; the anthracol, however, had a decided tendency to scale and particles of culm would easily rub off, showing that if this material were to be shipped much fine material would result, which would prove most unsatisfactory to both dealer and consumer. By grinding the pitch and culm together, so as to reduce the larger particles of culm, a dense, homogeneous, strong anthracol was made that gave no signs of attrition and withstood the roughest handling. Besides, the grinding gave a much better mixing of the materials than could be accomplished otherwise and resulted in a very uniform product. A screen test of the culm as received from the mines is as in Table VI.

TABLE VI. SCREEN TESTS OF CULM AND GROUND PITCH-CULM MIX

Culm Before Grinding		Pitch-Culm Mix After Grinding			
Screen	Per Cent	Screen	Per Cent	Per Cent	Per Cent
On 20-mesh.....	7.57	On 20-mesh.....	2.73	2.80	3.20
On 40-mesh.....	48.15	On 40-mesh.....	31.11	23.20	24.40
On 60-mesh.....	28.40	On 60-mesh.....	28.76	26.93	27.06
On 80-mesh.....	6.15	On 80-mesh.....	7.32	10.00	9.65
On 100-mesh.....	3.60	On 100-mesh.....	3.71	6.90	5.61
On 200-mesh.....	4.45	On 200-mesh.....	22.04	15.10	19.23
Through 200-mesh.....	1.58	Through 200-mesh.....	4.33	15.07	10.85

A comparison of these tests shows that little grinding is required to get the mixture to the proper fineness for charging. The fineness necessary for pulverized fuel is not desired.

The weight of 1 cu.ft. of bituminous coal, prior to being charged into the oven, was 43.5 lb., the weight of 1 cu.ft. of the pitch-culm mixture containing 83 per cent culm and 17 per cent pitch prior to charging was 59 lb., or a difference of 15.5 lb. That is, the same volume of pitch-culm mixture weighs 35 per cent more than the same volume of bituminous coal; therefore, a little over 7 tons of pitch-culm mixture could be charged into the same oven as 5.3 tons of bituminous coal.

In modern coke-oven practice, the yield of coke per ton of bituminous coal charged is about 70 to 72 per

cent., depending on the quality of the coal. In practice, all the volatile matter is not driven off, a certain small percentage being precipitated as free carbon, which passes into the coke, thereby increasing the weight of the coke about 2 or 3 per cent; thus, a 32 per cent volatile coal, instead of giving a yield of 68 per cent coke, would give 70 or 71 per cent.

When using the pitch-culm mixture similar results are obtained. The mixture containing 17 per cent pitch and 83 per cent culm has 15 per cent volatile matter; therefore the theoretical yield of anthracol should be 85 per cent. But as some of the volatile matter is precipitated as carbon the actual yield is 87 per cent. An oven was charged with a mixture of 23 per cent pitch and 77 per cent culm, which contained 18 per cent volatile matter; after the oven was coked and pushed, the anthracol was carefully weighed and showed a yield of 84 per cent.

Another mixture of 17 per cent pitch and 83 per cent culm was prepared, and weighed carefully in the laboratory, then charged into a bomb and all the volatile matter driven off; the yield of anthracol was carefully weighed and was found to be 87 per cent exactly; so that the figures have been checked by both actual tests on a large scale and by check runs in the laboratory.

#### OVEN WILL YIELD TWELVE MORE TONS DAILY

The fact that more of the pitch-culm mixture than bituminous coal can be charged into an oven is most important. For instance, the coking time of bituminous coal is 18 hr. Therefore if an oven will hold 16 tons, 21.28 tons will be charged in 24 hr. If the coal contains 30 per cent volatile matter, the yield in coke will be 72 per cent, or 15.32 tons. As the same oven can be charged with 21.12 tons of the pitch-culm mixture and as the coking time is only 16 hr., in 24 hr. 31.68 tons will be charged. As the mixture contains 15 per cent volatile matter, the yield will be 87 per cent of 31.68 tons, or 27.56 tons, a difference of 12.24 tons in favor of anthracol.

Naturally, the byproducts resulting from the culm-pitch mixture used in making anthracol are not present in as great quantities as in the manufacture of coke from soft coal. Also, a smaller amount of gas is given off by the mixture when heated. Bituminous coking coal contains from 28 to 35 per cent volatile matter, while a mixture of 17 per cent pitch and 83 per cent culm contains only 13.73 per cent, showing that the bituminous coal will give off more than twice as much gas and byproducts as the anthracol mixture.

From the byproduct results obtained in the various tests made the data in Table VII as to average yields per ton of anthracol charged have been obtained.

TABLE VII. YIELDS OF BYPRODUCTS IN COKING PROCESS

Ammonia sulphate, lb. per ton.....	9.9
Light oil, gal. per ton.....	0.6
Tar (above 170 deg. C.), gal. per ton.....	5.07
Gas (from oven test), cu.ft. per ton.....	4.080
Gas (from bomb test), cu.ft. per ton.....	5.910
Heating value of gas (determined), B.t.u. per cu.ft.....	330
Heating value of gas (calculated), B.t.u. per cu.ft.....	336
Anthracol yield, per cent.....	87.0

These tests and data show that the light oil is not present in sufficient quantities to make it worth while recovering; therefore the only possible byproducts are gas, ammonium sulphate and tar. Whether or not the installation of the apparatus necessary to recover the two last is worth while is a matter for future study. At the present time, I would say that no money should be spent on a byproduct-recovery plant for making an-



TABLE VIII. ANALYSIS OF GAS FORMED IN COKING

	Per Cent		Per Cent
Carbon dioxide (CO <sub>2</sub> )	1.0	Carbon monoxide (CO)	3.1
Benzene (C <sub>6</sub> H <sub>6</sub> )	0.1	Methane (CH <sub>4</sub> )	9.0
Ethylene (C <sub>2</sub> H <sub>4</sub> )	0.1	Hydrogen (H <sub>2</sub> )	73.4
Oxygen (O <sub>2</sub> )	1.0	Nitrogen (N <sub>2</sub> )	12.3

TABLE IX. MATERIAL USED IN BOMB TESTS

	Washed Culm, per Cent	Pitch, per Cent	Mixture 17 per Cent Pitch- 83 per Cent Culm per Cent
Volatile matter	6.56	56.2	13.73
Ash	8.05	0.25	6.86

TABLE X. MATERIAL USED IN COKE OVEN

	Per Cent
Volatile matter	15.03
Ash	16.20

thraccoal. I would use the non-recovery type of oven, which eliminates the byproduct-recovery apparatus and burns the gas evolved from the charge directly in the flues, which is not only less expensive, but will generate greater heat than where the byproducts are recovered. This oven should not only sustain combustion without outside heat but should be able to coke the anthraccoal in less time than the recovery type of oven.

The gas results are based on two series of tests, one of which was made in the byproduct apparatus on a full oven charge and the other by the standard Semet-Solvay bomb test method. The bomb test indicated a greater yield of gas than the oven test for the following reasons:

1. The bomb tests were made on low-ash (8.05 per cent) slush prepared on a concentrating table to approximate the slush that is to be used on a commercial scale, and the oven tests were made on the high-ash (18 per cent) slush. This fact accounts for the bomb giving 11.2 per cent more gas than the oven tests show, which may be expected on a commercial scale.

2. There is some leakage in the gas apparatus at the ovens, which also makes the gas yield low on the oven test, while the bomb test allows no leakage and records all gas.

The bomb test records all the gas obtained in the charge, while the oven test does not, as some of the gas is left in the charge as unvolatilized matter.

4. The oven temperatures on the oven test were below normal.

Taking the above facts into consideration and calculating the oven-test results to low-ash slush, gives the summary of low gas yields and heating values in Table XI.

TABLE XI. TESTS OF GAS FORMED IN MANUFACTURE OF ANTHRACCOAL

	Gas per Ton Cubic Feet	Heating Value, B.t.u. per Cu.Ft.	Total Heating Value, B.t.u. per Ton
Bomb test	5,910	336	1,985,760
Oven test	4,570	330	1,508,100
Average	5,240	333	1,746,930

These results indicate that with a non-recovery type oven there would be sufficient gas for operation but that with a byproduct recovery oven the self-sustaining operation would be doubtful.

The basis of this conclusion is as follows:

Average gas yield from bituminous coking operation, cu.ft.	10,000
Average heating value of gas, B.t.u. per cu.ft.	500
Total heating value per ton of bituminous coal, B.t.u.	5,000,000
Average gas used for coking, per cent	50
Heating value in gas to coke 1 ton bituminous, B.t.u.	2,500,000
21 tons of anthraccoal charge coked in 16 hr.	by same amount of heat
16 tons of bituminous coal coked in 18 hr.	
31.5 tons of anthraccoal and	
21.6 tons of bituminous coal	
1.46 tons of anthraccoal or	coked by 2,500,000 B.t.u.
1 ton bituminous coal	
1 ton of anthraccoal charge would require	1.46
	$\frac{2,500,000}{1.712,000 \text{ B.t.u.}} = 1.46$

The bomb test results indicate an excess of gas while the oven test results indicate a deficiency; the average

shows a slight excess. With a non-recovery oven, the margin would be considerably greater, as all the sensible heat in the gases, besides the byproducts, would go back into the heating of the ovens.

A direct comparison between the chestnut size of anthraccoal and the same size of anthracite coal was made by an eight-day test of each in a kitchen range. The range performed the same service in each test, cooking three meals a day, heating water in the boiler, and, in fact, doing exactly the same work in each case. Observations were made as to amount of fuel fired each day, the amount of ashes produced, and the position of the draft during each run. The fire was started with wood at the beginning of each test and allowed to burn completely out at the end of the eight days. With both anthraccoal and anthracite the fire was dampened at night and between meals with equal ease.

The total fuel consumption in each eight-day test was 288.5 lb. of anthraccoal and 346.52 lb. of anthracite, or 20.1 per cent more anthracite than anthraccoal. As exactly the same service was obtained from each fuel, the results show that in this range the chestnut anthracite was 20 per cent less efficient than the anthraccoal of the same size.

TABLE XII. TESTS OF ANTHRACCOAL IN DOMESTIC USE

	Chestnut Anthraccoal	Chestnut Anthracite
Fuel fired, lb.	288.50	346.52
Ashes removed, lb.	59.5 (20.6 per cent)	61.9 (17.9 per cent)
Number of days burned	8	8
Number of hours burned	192	192
Fuel burned, lb. per hour	1.50	1.80
Relative efficiencies, anthraccoal = 100 per cent.	100	80

These tests were made on commercial anthracite prepared by the Hudson Coal Co. at Marvine colliery and should be representative of the anthracite placed on the market at the present time.

The evidence and data submitted thus far appear to point to a plant of regenerative non-recovery ovens. The reasons for preferring this are as follows:

1. If the gas is cooled first the sensible heat will be lost. 2. Removal of the byproducts will lessen the heating value of the gas. 3. The byproducts in the anthraccoal gas are about one-third to one-half those in the bituminous gas, so that it is doubtful, with the uncertain and changing market, whether the recovery of the byproduct would be worth the expense of the byproduct apparatus which represents one-half the cost of the ovens. 4. A non-recovery oven of the regenerative type will burn the gas direct, have the benefit of the sensible heat in the gas as it comes off the charge, and also have the additional heat value of the byproducts which are not removed. 5. The non-recovery type ovens should prove to be self-sustaining and have ample gas for an exceptionally hot retort and quick coking. 6. A non-recovery type oven operating with anthraccoal should produce 79 per cent more anthraccoal in 24 hr. than the same type of recovery oven. As the cost of manufacture in each case is almost the same, with perhaps a little greater expense involved in the preparation of the anthraccoal mix, the 79 per cent greater production of anthraccoal than coke in 24 hr. more than offsets the loss of the byproducts. 7. A non-recovery type oven should prove more adaptable to the anthracite region. Its cost will be less to construct than the recovery type, and it will not require a skilled staff of chemists and workmen. 8. No market need be developed or additional sales force required, as would be necessary if byproducts were produced.



# Problems of Operating Men

Edited by  
James T. Beard



## Inalienable Right of the Worker

Every Worker Has the Right To Work, Which Cannot Be Taken from Him by an Unjust Law, Provided the Exercise of That Right Does Not Impair the Equal Right of Another

THERE is no doubt and, consequently, there is no room for argument that certain laws are required to forbid dangerous practices of workmen, whereby, through the ignorance, carelessness or recklessness of one, other workers would be injured or perhaps lose their lives.

On the other hand, every worker has certain rights that the law cannot take from him. An act of legislature becomes unconstitutional when it discriminates between industries or individuals in a manner that is unfair or unjust to either party.

Again, a court will always rule that a law cannot be construed in a manner to benefit an interested party to the detriment of another, or for the purpose of securing the selfish ends of a certain individual or class. It is evident that such an interpretation of the law would be unjust and, if such is possible, there is need that the law be revised.

### ADVANTAGE TAKEN OF MINERS' CERTIFICATE LAW IN INDIANA

Now, in Indiana, we have many good laws relating to coal mining, but, at times, certain requirements of the law have been employed to the unfair disadvantage of men seeking work in the mines. For that reason, I think it is time to put the foot on the soft pedal and consider the effect produced by those who abuse our laws.

For example, the Indiana mine law, Chap. 276, Sec. 9, requires every miner to hold a certificate granted him by a duly authorized examining board. Having this certificate he can generally obtain a job, provided he can get a certified miner to sign a statement that he will look after him in the mine.

To all appearances this is an excellent law, as it protects the man and his fellow workmen from the possibility of danger by reason of the new man's ignorance in respect to unsafe practices in mining. But, let us look a little further and see the unfair advantage that is taken of this requirement of the law, by the organization known as the "Miners' Union."

Suppose, for instance, the union decides that there are too many coal miners in the district and means must be taken to secure a shortage of labor, having in view a certain wage increase.

Acting under the provision of this law, it is an easy matter for the union to exert its influence to produce the desired shortage of men.

How is it done? The members of the union are instructed to refuse to sign the permit of new men, except such privilege may possibly be extended in the case of a particular friend. That this method is being used, in Indiana, can be proved by investigation.

### WORKING OF THE LAW

Bearing these facts in mind, the question is, What remedy can be applied that will improve the situation. It would seem that here is a matter that should be corrected in our mining law, since it places in the power of the Miners' Union the means of controlling the amount of labor available in the state or district. In other words, the law makes possible a discrimination that deprives a worker of a constitutional right.

Looking further into the law, we find that every mine boss (foreman), in Indiana, must be a certified miner and, in addition, must hold a certificate of competency enabling him to act as mine boss and have charge of a mine. The law requires, Chap. 258, Sec. 21, that he shall pass an examination before the state mine inspector and prove his qualifications and fitness to take charge of a mine.

Believe me, he must show that he is a safety engineer, ventilation expert and a mechanical and electrical wizard, all combined in one. I leave it to the vote of readers to say if such a man is not qualified to judge of the ability and competency of any miner who comes to him seeking employment. Why should not our mine bosses be authorized by law to decide the qualifications of miners?

### MINERS UNJUSTLY TAXED

But the worst is yet to come, the mine boss has been justly condemned for demanding a small fee when giving a man a job. The state, however, charges the man a dollar when he is given a certificate allowing him to work as a miner. Again, the union charges the poor fellow \$25 before permitting him to start to work in a mine.

Truly, if we keep on a man will have to be listed in the Dun and Bradstreet

Agencies before he can get a job of chunking coal. There are laws enough in the Indiana code, but what we need is more common sense in their application.

In closing, let me say it is not my claim that the world owes any man a living. I do claim, however, that every man has a constitutional right to work for his living, without being taxed at every turn.

JUSTICE.

Vincennes, Ind.

### Right of Examining Board to Refuse Oral Examination

*Under the Bituminous Mine Law of Pennsylvania, question is raised as to right of examining board to refuse oral examination to a candidate who has failed to answer the written questions to the satisfaction of the board*

REFERRING to the reply given to the inquiry entitled "Authority of Examining Board," *Coal Age*, July 14, p. 60, allow me to take exception to the interpretation of the law set forth in this reply.

The position is taken, by the editor, that the words, "shall also undergo" an oral examination, place the obligation on the candidate and not on the examining board. It is argued that "the law does not state that the applicant shall be given, but shall undergo an oral examination."

It is further stated that the evident intention of the lawmakers was that the examining board should determine to their satisfaction the fitness of a candidate to fill the required position; and the fact is emphasized that the law "distinctly makes the written examination the principal one."

### EXAMINING BOARD AUTHORIZED TO MAKE ITS OWN RULES

The reply concludes that when a candidate has failed to answer the written questions to the satisfaction of the board it is logical to assume that he is unfit and "nothing further is required." Attention is drawn to the fact that the law (Art. 19, Sec. 2) authorizes the examining board to "formulate rules for conducting the examination."

In my opinion, this reply very fluently tries to exonerate the examining board in its refusal to give a candidate the full written and oral examination required by law and on which his rating must be based, in accordance with the reading of Sec. 4 of the same article, which states as follows:

The questions and answers thereto, in the oral examination, shall be reported verbatim, by an expert stenographer, and



typewritten fully to assist the board in the work of rating the qualifications of the candidates.

I want to emphasize the words "to assist." The same section continues:

Any candidate who shall make a general average of at least 90 per cent shall be deemed successful.

Mark the words "general average." My contention is that, regardless of a candidate's failing to answer the written questions to the satisfaction of the board, his rating must be a "general average" based on both the written and the oral examinations, the latter being given "to assist the board in the work of rating the qualifications of the candidate."

Let me strengthen this conclusion further, by reference to the concluding paragraph of said Sec. 4, which reads:

The examining board shall, as soon as practical after the examination, furnish to each applicant, on printed slips of paper, a copy of all questions (oral and written) given at the examination, marked "right," "imperfect," or "wrong," as the case may be.

The question in my mind is: How can an examining board comply with this requirement of the law when it refuses to give a candidate the oral examination on the ground that he has failed to give satisfactory answers to the written questions asked him? This is a question I would like to see discussed in *Coal Age*, and learn the opinion of others.

Fredericktown, Pa. FAIRPLAY.

### Large Pillars Difficult to Work

*Roof control in mining, a factor determined by conditions and not to be assumed. Difficulty increases when working large pillars. Retreating system advocated.*

KINDLY permit me to offer a few comments relative to the size of pillars suggested in the article of R. Dawson Hall, *Coal Age*, July 7, p. 13. The article has reference to adopting a plan of working most suitable for the use of improved machinery for handling the coal mined at the face.

We all recognize that, in view of the recent improvements in machinery for mining and loading coal, changes must be made in the old established methods of working, in order to give these machines a fair trial and derive the benefit that is possible by their use. This is the only way to show the merits of these machines and the rapid progress made in mining.

However, it is my humble opinion that the writer of the article to which I have referred, has allowed his enthusiasm to lead him too far, in an effort to adapt the working face of the coal to these improvements in mining and loading machines. I verily believe many experienced mine foremen will hesitate a long time before choosing to work a 500-ft. coal pillar, as suggested by Mr. Hall.

I fancy that such a plan would hardly work successfully in mining a soft,

gassy seam of coal under heavy cover. With these conditions, the proper control of the roof is an item that cannot be assumed beforehand. Roof control depends wholly on conditions such as the nature of the roof, floor and coal, depth of cover and other things that must be accurately judged by the man in charge of the undertaking.

### PROPER ROOF CONTROL DETERMINES METHOD OF WORKING

Before attempting to work large coal pillars, there are two things to be considered chiefly; namely, the kind of roof and the amount of gas given off by the coal. I mention these particularly because, in my experience, they are factors that give much trouble if not carefully studied beforehand.

Assuming a compact and uniform roof overlying the coal, I would consider a 200-ft. face large enough for successful working. It is doubtful in my mind whether even this length of face will afford a proper control of the roof where slips or faults exist.

My idea would be to form a panel 1,000 ft. long by 600 ft. wide and divide this into five pillars, 200 x 600 ft. in area by driving narrow roads through the panel. I would make the middle road 10 ft. wide and use that as an intake for the air, dividing the current right and left at the face of the panel.

The coal in this panel should be worked out on the retreating plan, the pillars being stepped. This will afford a better roof control and avoid the cutter and loader working on the same pillar at the same time. It is my opinion that the retreating system of mining has not been given the attention it deserves, because of undue haste to produce coal.

In his article, Mr. Hall has well referred to the use of heading machines in driving entries. These machines not only afford a more rapid development, but avoid the necessity of paying yardage for driving the headings. The heading machine is a decided advantage in the working out of large coal areas.

### SURFACE DAMAGE IN ILLINOIS MINES

In Illinois, the question of surface damage in the mining of coal is an important one. In most cases, here, the matter of filling the space previously occupied by the coal is out of the question. The remedy generally prescribed, when it is necessary to avoid surface damage, is to remove only 50 per cent of the coal, which means a waste too great to be considered. Just here let me ask, would there not be a greater subsidence of roof, in the working of small pillars at a slower rate, than when larger pillars are taken out more rapidly? It is a question, in my mind, which would tend to produce the greater damage on the surface, under like conditions.

The retreating system makes it possible to work large areas and the settlement that results lessens the liability to a squeeze, which so often comes when mining coal by the advancing system. Moreover, the air current cannot be

fouled by passing over old workings, in the retreating system, and the haulage roads are better protected.

In closing, let me say that every coal seam presents a separate problem that must be studied and no hard-and-fast rule can be laid down that will apply to every case. If it is possible to work a 500-ft. pillar, as suggested by Mr. Hall, it would seem that a larger car should be used; but that would be possible only in a drift mine or where the coal is hoisted in skips. In a drift mine at Rodange (Luxembourg) I have seen a full size locomotive enter the mine drift with railroad cars.

It goes without saying that the mining of coal must keep pace with improved mining equipment. What would we think of a farmer plowing his field with oxen, or reaping his wheat with a scythe, and trying to hold his own in the market?

GASTON F. LIBIEZ.

Peru, Ill.

### Advocating Large Pillars

*Large mine pillars increase the life of a mine, reduce the expense of operation and prevent the great loss of coal that occurs when the pillars are too small to support the roof pressure.*

READING the excellent article of R. Dawson Hall, entitled "Have Mining Engineers Accepted All that Developments in Machinery for Handling Coal Imply?" *Coal Age*, July 7, p. 13, I was impressed with one prominent feature in the article; namely, the advocating of large pillars for the support of the roof.

If I recall rightly, the same feature has been frequently set forth in previous articles in *Coal Age*, by Carl Scholz, F. A. Pocock and others, and the resulting advantages cannot be gainsaid. Large pillars are referred to by Mr. Hall as better adapting the method of working to the improved types of machines now being used for cutting and loading the coal.

That the successful laying out of a mine involves choosing a plan that is best adapted to the use of these improved types of mining machines cannot be doubted. It is my firm conviction that large mines will be planned in the future in this regard and, as a result, the life of the mine will be greatly increased.

### FUTURE REQUIREMENTS IN MINING

As time goes on, mining operations must be extended to greater depths and the workings will generally prove more gaseous. To maintain operations at a reasonable expense, under these conditions, means must be adopted by which the coal can be mined and handled at a less cost of time and labor, and this must be accomplished largely by the proper planning of the mine.

In the future, larger areas will be allotted to a single shaft opening. That being the case, greater attention must be given to maintaining good haulage roads, good ventilation and good drainage, all of which are necessary to reduce the cost of operation to a minimum.

Nothing will accomplish these ends more surely than laying out the mine with large pillars that will afford ample support of the overburden and prevent the crushing of timbers and coal and the heaving of the bottom on the roads.

There are many examples with which we are all familiar showing how expensive the operation of a mine becomes after it has been worked, say, ten years. With due consideration to the points here mentioned, however, the increase in expense of operation after twenty years should only be that due to the increased length of haulage roads and airways.

#### LARGE PILLARS LESSEN LOSS OF COAL

Another item that urges the use of large pillars is the great loss of coal that results when the pillars are made too small. Consider for a moment the heavy losses sustained by coal operators when whole sections of their mines are closed by a squeeze or creep and must be abandoned together with machines, cars, pumps, tracking, timbers, pipes and other supplies that cannot be recovered.

Frequently, the cost of recovering an expensive machine that has been caught by a heavy fall of roof will almost equal the value of the machine, to say nothing of the final abandonment of work in that section, by reason of the conditions making it unsafe for further working. All of this may result if the pillars left for the support of the roof are too small.

The remedy for these conditions is obviously the leaving of larger pillars. In other words, there must be a lesser extraction of coal in the first working, which means a larger proportion of pillar coal left for the robbing, or to be taken out when retreating.

For the most economical and efficient mining of coal, then, let the motto be, Plan the mine with a larger percentage of pillar coal. There will result a larger total extraction and the plan will afford a better opportunity for the installation of improved mining machines.

Linton, Ind. W. H. LUXTON.

#### Shooting Coal Off the Solid

*What is the meaning of the expression "Shooting off the solid?" While specifying that coal must be properly mined before it is blasted, the Pennsylvania bituminous law excepts the practice of shooting off the solid.*

RECENTLY attention has been called to that clause of the Bituminous Mine Law of Pennsylvania that specifies how coal is to be blasted. The law requires that the coal must be "undercut, centercut, topcut, or sheared by pick or machines," before shooting and states that the hole must not be laid deeper than the cutting.

In commenting on this point, *Coal Age*, July 28, p. 142, I. C. Parfitt discusses, in a practical way, whether the law is intended to prohibit the blasting of coal on a loose end. I agree fully with the conclusion of Mr. Parfitt that the law does not forbid the shooting of coal having a loose end, which is very common practice.

Incidentally, however, this question leads to another, which is of even greater importance. I refer to the matter of shooting off the solid. The question as to whether this practice is safe is "age old," as the meaning of the expression has never been clearly explained.

In the same article (Art. 4, Sec. 9), the bituminous law, after specifying that coal must be mined before it is blasted, distinctly permits shooting off the solid, in the following words: "Provided, however, that in districts in which it has been the common practice to blast coal from the solid, said practice or method may be continued, notwithstanding anything to the contrary herein contained."

As the meaning of the expression "shooting off the solid" is commonly understood to mean shooting coal that has not been mined or sidecut, it would seem that this latter clause annuls the preceding requirement of the law. The same article (Sec. 14) states, "In all mines in which coal is blasted from the solid, all holes shall be fired when all the workmen are out of the mine except the shotfirers and other persons delegated by the mine foreman to safeguard property."

This added reference makes it doubly sure that the law specifically permits the practice of shooting off the solid, in direct contradiction to the requirement that the coal must be properly mined before it is blasted.

We all know that the practice of blasting coal from the solid requires

considerably more powder to perform the same work and is more dangerous to the man firing the shot, as there is every chance of a misfire or a windy or blownout shot occurring. Practically, in many cases, the effect is the same as when a hole is drilled a little deeper than the coal is mined.

From the standpoint of safety this law should be amended in a manner to prohibit the practice of shooting coal off the solid. The life of one miner is of more value than all the coal mined. With the present reading of the law, it will always happen that some careless or reckless miner will fire a shot that will be fatal to himself or another worker.

An instance of this kind happened about a year ago in one of the mines in this region. Two miners were working adjoining rooms. One of them, thinking that a charge of powder would do the work easier than mining the coal, prepared and fired a shot that blew through and killed the man in the next room. The victim was a careful and efficient man, but lost his life through the lack of thought or the recklessness of his fellow worker.

In closing, let me ask how long it will be before this provision of the bituminous law will be wiped from the statute. We should be thankful that all coal companies do not take advantage of the provision of the law allowing shooting of the coal from the solid. I hope this discussion will draw attention to these points of the law needing correction.

Johnstown, Pa.

F. W. S.

## Inquiries Of General Interest

### Laying Out Mine Track Curve

Method by Tangent and Chord Deflections Most Practical For Laying Out Track Curves in Mines. Careful Alignment of Points Necessary To Insure Success

I AM anxious to learn the simplest and most practical way of laying out a curve in a mine, where it is desired to run in a curve or cutoff connecting two entries, and thereby avoid sharp angles in haulage roads, as for example, where a pair of cross-entries are turned off a main heading, at an angle of 90 deg. Assuming a radius of curvature of 60 ft., how is such a curve to be laid out, using 20-ft. chords for that purpose?

Another problem is how to run in a semi-circular curve between two parallel headings that are driven on 60-ft. centers. Any information you can give that will enable me to lay out such curves, will be much appreciated.

Pa.

MINE ENGINEER.

The simplest way of laying out a curve in a mine is to employ the method known as "tangent and chord deflections." Referring to the accompanying

figure, which illustrates a cross-entry driven at right angles to a main heading, the first step is to establish the center line in each entry. Then, starting from their intersection at O, measure off, on each center line, a distance equal to the desired radius of curvature, which in this case is 60 ft., and mark the PC and PT points on each of the two entries. The PC point (point of curve) is where the curve starts on the main heading, and the PT point (point of tangency) is where the curve ends on the cross-entry.

The next step is to calculate the tangent deflection ( $d$ ) for any length of chord ( $c$ ) and any radius ( $R$ ). In this case,  $c = 20$  ft. and  $R = 60$  ft., and we have for the tangent deflection

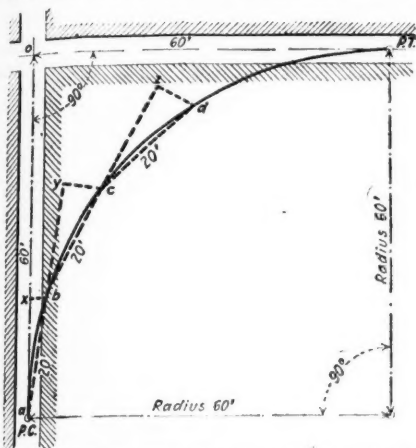
$$d = \frac{c^2}{2R} = \frac{20^2}{2 \times 60} = 3\frac{1}{3} \text{ ft., or } 40 \text{ in.}$$

This tangent deflection is the dis-



tance  $bx$ , in the figure, and  $ab$  is the 20-ft. chord. Observe that the tangent deflection  $bx$  is measured at right angles to the center line of the entry,  $ao$ .

To start the work, the end of the tape is held at  $a$ , the PC point, and a distance of 20 ft. is measured in the



METHOD BY TANGENT AND CHORD DEFLECTIONS

direction of the chord  $ab$ , marking the point  $b$  at a distance  $bx = 40$  in., measured at right angles to the center line of the entry.

Having established the first point of curve  $b$ , extend the chord  $ab$  to a point  $y$ . Now measure the chord  $bc$ , 20 ft., making the chord deflection  $cy$  twice the tangent deflection or 80 in.,

measured at right angles to  $by$ . The chord deflection is always twice the tangent deflection.

In the same manner, having established the second point of curve  $c$ , proceed to establish a third point of the curve  $d$ , by extending the chord  $bc$  to a point  $z$  and measuring another 20-ft. chord  $cd$ , making the distance  $dz$ , or the chord deflection, 80 in., as before. Observe in extending the chord in each case, the lines  $aby$  and  $bcz$  are straight lines. Great care is required in the alignment of these points, in every case, in order to insure success.

It is important to observe that the first point on the curve is always determined by the tangent deflection, while all other points on the curve are determined by the chord deflection, which is twice the tangent deflection.

In order to run a semi-circular curve connecting the center lines of two parallel entries that are driven on 60-ft. centers, it is evident the radius of curvature will be one-half that distance or 30 ft. In that case, using a chord 14.14 ft. long, instead of a 20-ft. chord the same tangent and chord deflections can be used as before. The method of running out the curve is the same as that just explained, the length of chord used being the only difference. However, greater care, if possible, must be used in running this sharper curve, and success depends on the accurate alignment of the successive points.

## Examination Questions Answered

### Examination, Mine Foremen and Firebosses, Lexington, Ky., May 30, 1921

(Selected Questions)

**QUESTION**—A seam having an average thickness of 4 ft. underlies a thousand acres. The specific gravity of the coal being 1.26, how many tons of the coal can be gotten out of this seam, allowing for a loss in working of 14 per cent?

**ANSWER**—An acre of land contains 43,560 sq.ft. Assuming a level 4-ft. seam of coal underlying 1,000 acres, the cubic contents of the seam is  $1,000 \times 43,560 \times 4 = 174,240,000$  cu.ft. The coal having a specific gravity of 1.26, its weight per cubic foot is  $1.26 \times 62.5 = 78.75$  lb. Then, allowing for a loss of 14 per cent in working, the available coal being 86 per cent, the weight of coal to be taken out is  $0.86(174,240,000 \times 78.75) \div 2,000 = 5,900,202$  tons.

**QUESTION**—What is the area of a drift mouth with timbers 8 ft. at the top, 10 ft. at the bottom and 6 ft. high?

**ANSWER**—Assuming the dimensions given represent the size of the clear sectional area inside the timbers, the

area is found by multiplying the average width of the airway by its height. The average width, in this case, is half the sum of the top and bottom widths, or  $\frac{1}{2}(8 + 10) = 9$  ft. The sectional area is therefore  $6 \times 9 = 54$  sq.ft.

**QUESTION**—(a) How many rails, ties, spikes and fishplates will be necessary to build one mile of track, assuming rails 30 ft. long and ties spaced 2 ft., center to center? (b) How many tons of rails will be necessary, assuming 30 lb. to the yard?

**ANSWER**—(a) One mile of track requires  $2 \times 5,280 = 10,560$  ft. of rails. The rails being 30 ft. long, the number required is  $10,560 \div 30 = 352$  rails, or 176 rails on each side of the track. There are 350 joints requiring this number of pairs of fishplates. Spacing the ties 2 ft., center to center, one mile of track will require  $5,280 \div 2 = 2,640$  and one additional tie, making 2,641 ties in all. Counting four spikes to the tie, the number of spikes required

in this case is  $4 \times 2,641 = 10,564$ .

(b) Using 30-lb. rails 30 ft. long, each rail will weigh 300 lb., and the total weight of the rails is, therefore,  $352 \times 300 \div 2,000 = 52.8$  tons.

**QUESTION**—Assuming 80 lb. is the weight of 1 cu.ft. of bituminous coal, in a seam 4 ft. thick, and butt entries turned off to the right, every 300 ft., are 2,000 ft. long, if 2 ft. of roof is taken down to make height, at \$2 per yard, what is the cost per ton-yard?

**ANSWER**—The meaning of this question is not entirely clear. However, assuming the entry is driven 10 ft. wide, in coal 4 ft. thick and weighing 80 lb. per cu.ft., the weight of coal in a yard of entry is  $80(3 \times 4 \times 10) \div 2,000 = 4.8$  tons. Then, taking down top at a price of \$2 per yd., the cost per ton-yard is  $200 \div 4.8 = 41\frac{1}{3}$ ¢. per ton-yard. The distance apart of the butt entries and their length do not enter the solution, but it is necessary to assume the width the entries are driven.

**QUESTION**—What, in your opinion, is a miner's first duty on reaching his working place?

**ANSWER**—The miner's first duty on entering his place is to carefully examine the roof as he proceeds, in order to detect any bad top. He must look for gas, fallen timbers or other dangers that may be present. Before proceeding to load coal, the miner must reset any timbers that may have been discharged by the shots of the previous shift. He must observe that there is no loose coal standing and ready to fall later when he is at work.

**QUESTION**—With what material should stoppings be built in gaseous mines?

**ANSWER**—All stoppings must be built of incombustible material, such as stone, shale or slate, brick or concrete.

**QUESTION**—State the different methods of timbering bad roof and soft bottom, and hard top and soft bottom.

**ANSWER**—When the bottom is soft, the timbers are liable to be forced into the floor by the weight resting on them. Under these conditions, it is often necessary to stand the timbers on footboards that will distribute the pressure over a greater area of the floor. When the roof is bad, particularly if the bottom is soft, the posts or timber frames require to be set closer together and lagging must often be used above the collars to give greater support and prevent the roof from falling between the timbers. In post timbering under bad roof, good cap-pieces must be used over each post.

Where the roof is hard, little timber may be required, further than an occasional crossbar hitched into the rib on each side of the road, or supported on short legs set into the solid coal. Under these conditions, better results are obtained by providing larger pillars that serve to distribute the pressure exerted by the hard roof, over a greater area of the bottom. This is more effective than any method of timbering that can be used.

## Readers Views and Comments

### Classification of Coal

I have read with interest Mr. de Graaf's comparison (*Coal Age*, August 11, p. 222), of analyses of tidewater pool coals with those I published in your paper some time ago. I would suggest that some differences may arise because he is basing his statements on some 200 analyses, whereas I used 17,000 in making up my tables of averages. I assume that Mr. de Graaf had few samples of coal delivered at Baltimore.

It is significant that he and I practically agree in percentage of volatile in pools 10, 11 and 14, and in percentage of ash in pools 11, 15 and 18; on percentage of sulphur in pools 10, 12, 14, 15 and 18, and in heat value in pools 10, 12 and 4. He agrees with me in regard to pool 18, that if properly prepared many mines in 18 would go into pools 10 and 11, and that many now in 9, 10 and 11, would be in pool 18, except for extraordinary care in preparation.

New York.

H. M. PAYNE,  
Consulting Engineer.

### Dr. Ashley Makes Some Practical Suggestions on Coal Classification

The article by Mr. de Graaf in *Coal Age*, August 11 (p. 222), has brought me back again to a consideration of the classification indicated by Dr. Payne's article in your issue of March 17. Let me call your attention to a very few items as illustrating what I had in mind: For example, Pool No. 1 is quoted as showing an average B.t.u. of 15,000. As it was my privilege to sample many of the Navy accepted mines and to have access to the heat determination and analyses of the others, while I have not the figures at hand, I do not now recall one of them reaching 14,900—and as I remember, most of them ran between 14,500 and 14,800.

Comparing the analyses of Pools 1 and 2 in Dr. Payne's table, it is not evident why there should be a difference in heat value of 500 B.t.u. Indeed, comparing Pools 1, 2 and 3, the analyses do not show any real reason for their separation, unless No. 2 were pointed off because of slightly higher volatile ratio.

I have sometimes thought that since we have in this country very few coals with a fuel ratio of more than 5, it might be well in my classification (*Coal Age*, August 18, 1921, p. 267), to reduce the lower limit of what I have called Lovol A to 4.5. If that were done, Pools Nos. 1 and 3 would fall within type Lovol A, or using the numbers, in Class No. 3, while No. 2 would fall in type Lovol B, or Coal No. 4.

Again, comparing Pools 12 and 14: Pool 12 is quoted as high grade, medium volatile, and Pool 14 as medium grade, medium volatile. The difference shows in the higher percentage of ash in Pool 14, but for the life of me I cannot figure out how coal from Pool 14 with the analysis given should average over 1,200 B.t.u. higher than coal from Pool No. 12.

Indeed, Mr. de Graaf's figures for B.t.u. reverse the comparison given by Dr. Payne and are in accord with what might be expected from the analyses.

My point is this: It would seem possible and desirable to draw up certain definite limits along the four lines of (1) fuel ratio; (2) ash; (3) sulphur; (4) fusing point of ash, giving definite names or numbers or anything else to these types, and then let coals fall where they will.

Along this line I have been tending to revert to the use of three letters to express the different grades of ash, sulphur and fusing point of ash rather than the decimal point, the advantage being that the letters would show at once exactly the limits within which those three elements fall. As A, B, C, etc., have been used in designating the types of coal, I would suggest the possible use of X, Y and Z—X to express the highest grade; Y the medium and Z the lowest grade. The first letter used, in all cases to

express ash; the second, sulphur; and the third, fusing point of ash.

I would suggest, after a re-study, that X stand for less than 8 per cent ash; Y for 8 per cent to less than 16 per cent ash; Z for 16 per cent or more of ash. That X in the "second" place stand for less than 1 per cent sulphur; Y for 1 per cent to less than 2 per cent of sulphur; Z for 2 per cent or more of sulphur. That the "third" letter expressing the fusing point of ash be X, 2,600 deg. F. or more; Y, 2,300 deg. F. or less than 2,600 deg. F.; Z, less than 2,300 deg. F.

Harrisburg, Pa.

GEO. H. ASHLEY,  
State Geologist.

### Poor Coal Sampling Spoils Good Laboratory Work

The recent article by Mr. de Graaf, in the Aug. 11, 1921, issue of *Coal Age*, "Public Service Co. Analyses at Variance with Dr. Payne's," is quite interesting in view of the fact that many industrial users and public utilities find the same differences in the results of their analyses and those of the coal companies.

This variance can be attributed to many causes. It may be due to the conditions under which the samples are taken; whether at the mines or in the cars or barges at the consumer's plant, or perhaps to the sample being taken after the coal has been stored for some time. In some cases the difference in the results obtained may be traced to the negligence of the man taking the sample.

It is natural to suppose that everyone interested in the analysis and sampling of coal is conversant with the best methods of taking a representative sample. As a rule the methods suggested by the Bureau of Mines are used, but more often the sample is taken by a laborer or some one who really has no conception of the importance of what he is doing and cares less.

Prior to the war I was employed by a large steel company to check up at the mines all coal that was shipped to them for by-product purposes. I was stationed at Indiana, Pa., which happened to be centrally located to the mines from which most of our coal was shipped. My duties were to take samples from each car as it was shipped and analyze them for sulphur and ash content. My assistants were stationed at the various mines and at the end of the day they would bring the various samples to the chemical laboratory for analysis.

At the steel company's yards other samples were taken when the cars arrived, and the analyses at the mines were checked. At the beginning the two tests tallied fairly well, but there were periods when the difference between the two sets of figures were startling. Investigations disclosed the difficulty to be in sampling and showed various methods which should not be employed in taking a sample.

For instance, we found one man who was getting tired of taking a shovelful from the cars at regular intervals and decided that it was a silly thing to do anyway, so he simply took one shovelful from the gondola and that became the sample. Another man who was supposed to have taken three samples in the yards from three different shipments found he only had two samples. Thinking he would please the chemist he proceeded to a storage pile and made up another.

In another instance a few shovelfuls of coal were taken from the top of a 600-ton barge, and that was passed through as being a representative sample.

I have had the same experiences at industrial plants and public utility power plants where the sampling was left to men who did not know what it was all about. At one time I was employed by a large public utility company as a fuel inspector. Part of my duties consisted of instructions to the men doing the unloading, in the proper method of sampling.

While some one was on the job supervising the sampling, everything was done the right way, but as soon as the men were left to themselves the samples were not always reliable. In most instances the men could not be made to realize how important it was to get a sample representative of the coal contained in the barge or shipment of cars. To many it meant merely a few pounds of coal which the boss wanted.



An example of how little it means to some of them is the following: At one plant where they were burning both anthracite and bituminous coal a sample was sent to the laboratory, marked as representing a good grade of bituminous coal. When it arrived at the laboratory it was found to contain No. 4 buckwheat. It had apparently changed from bituminous to anthracite en route. Upon investigating it was found that the man had mislaid the sample he had taken and in a hurry had gone to the anthracite storage pile and taken another sample.

Of course, these are extreme cases. I am merely trying to bring out the fact that costly laboratory equipment may mean just so much apparatus, nothing more, unless a careful supervision is maintained over the coal sampling.

This should not in any way reflect on the methods used by Dr. Payne or Mr. G. A. de Graaf. Both are authorities on fuel analyses and are combustion experts, but the difference in the results obtained by them, brought back some of my experiences as a fuel inspector.

I have always maintained that unless the sample is absolutely reliable the laboratory work is for naught. A laboratory test can be checked, but once a sample is taken there is no way of checking it, particularly if the coal is being unloaded when the sample is taken and is then dumped on the storage pile or conveyed into the hoppers in the boiler room, and mixed with other coals.

Sampling should not be left entirely to the laborers unloading the coal or to anyone who is not in some degree aware of the importance of taking a representative sample. It should be done under the supervision of a laboratory man or engineer. It is not at all necessary that such a man devote his whole time to that work. An occasional trip to the various plants and unloading places is necessary however.

Coal samples taken at the mines are often more reliable, because the laboratory man or chemist usually takes his own sample and makes certain that the quartering down to the laboratory size is done in the proper way.

The methods employed in reducing the large sample to a laboratory sample is another part of the work which can be spoiled if great care is not taken. I have often found cases of neglect in this step even after the sample was taken in accordance with approved methods.

New York.

J. MEHR.

### Advertising Coal

There is not a single force in the world that can do more good for the coal operators, jobbers, and retailers of the United States than national and retail advertising at the present time. You are, of course thoroughly aware of the seasonal nature of the coal mining industry. You know that thousands of miners are unemployed because of this seasonal and negative factor.

Advertising will help to straighten out the sag in the labor curve, and will give the miners, in my opinion, a steadier employment. Just as soon as the people of the United States fully realize the exact status of the coal situation, you can bet your life that they will be considerably shrewder in purchasing their coal in midsummer as well as winter. Do you think for a moment that the people of the country know that transportation and labor are the principal items of cost in the coal business? Do you think that they know that the government has guaranteed the wages of labor until February, 1922, in the coal mining industry? Do you believe that they are versed relative to the large percentage of transportation cost in every ton of coal that they buy? Not at all. Very few people know anything at all about it. When I prepared my speech for the convention of the Michigan Retail Coal Merchants' Association at Grand Rapids, I found many facts, of course, that I knew nothing about, because I am not a coal man, but an advertising man. I sold myself on the idea, however, of telling everybody I meet that they should play safe and put their coal in at the present time. Two men have already accepted my advice, and they told me they did not realize the seriousness of the coal situation. On the other hand, no distinctive line has ever been drawn between anthracite coal and bituminous coal in this country. The public has only a vague impression of the magnitude of the two industries.

If the coal operators, jobbers, and retailers would come out in the open and give the facts to the public, I do not believe that our legislative body down at Washington would get very far in enacting new laws. Personally, I believe that it is a colossal crime to let the government representative decide the pros and cons of problems in the coal industry, when he does not know as much about the industry as some of the humblest retailers in any state.

Some day the coal people will wake up. Some day some one is going to drive it into their heads that it would pay every coal man to contribute a few pennies toward imparting specific information on the coal situation to the people of the country.

I could write you several pages on this subject, but I know that you are fully versed in regard to the foregoing problems. We are facing a perilous situation, and with the termination of the wage agreement on March 31, 1922, every industry in this country may be jeopardized to some extent, and may stand a big loss in production, because of want of fuel, if the workers and mine operators do not get together on a harmonious basis. If the people of the country would face facts, and would do their part toward purchasing at a proper period in order to eliminate as much as possible the seasonal market in the coal industry, the miners would be in a position to work steadily, and would doubtless be satisfied with lower wages after March 31, 1922 (assuming, of course, that our food, clothing, etc., is being sold at reasonable prices at that time). The mine operators, jobbers, and retailers have a big problem to solve. The public at large can help them solve the problem. Advertising is the basic force which should carry the message of the operators, jobbers, and retailers to the public. Is the coal industry as big as the problems which they are now facing? If they are not big enough to solve this problem, the United States government is going to enter the arena and see what it can do. Frankly, I believe that most coal operators, jobbers, and retailers are honest. Tell the honest facts to the public, and let them do the deciding. Advertising is the solution.

Detroit.

E. J. POAG,  
Campbell-Ewald Co.

### Railroads Report Decline in Car Loadings

A REDUCTION of 11,789 cars in the number loaded with revenue freight during the week ended Aug. 6, compared with the preceding week, is shown by reports received from the railroads by the Car Service Division of the American Railway Association. The total was 784,781 cars, which was a decrease of 150,949 cars compared with the corresponding week last year and 87,292 cars under that for the corresponding week in 1919.

The decrease was due principally to a falling off in the loading of grain and grain products, together with a reduction in the number of cars loaded with coal and merchandise and miscellaneous freight which includes manufactured products.

A reduction of 3,816 cars was reported in the number loaded with coal, compared with the week before, the total being 147,273 cars. This was 51,456 cars less than were loaded during the corresponding week last year. Loadings of merchandise and miscellaneous freight were 472,540 cars, or 2,241 cars less than were loaded during the previous week and 49,693 cars below the total for the same week in 1920.

An increase of 1,252 cars was reported in the loading of live stock, which totaled 26,610 cars while coke loadings were 4,218 cars, an increase of 107 cars over the week before. Reports showed 32,058 cars loaded with ore which was an increase within a week of 1,955 cars. A total of 43,460 cars were loaded with forest products, which was a decrease of 1,252 cars compared with the week before.

The Pocahontas and Northwestern districts were the only ones to show an increase in the loading of all commodities compared with the previous week, while the Southwestern was the only district to show an increase over the corresponding week last year.

THE SLACK IN BUYING is not due to a consumers' strike but to the growing number of people who have stopped paying more than they can afford.—*Houston Post*.

## Charleston Entertains Mine Inspectors in Twelfth Annual Conclave

Addresses of Welcome by Governor Morgan and Bonner H. Hill, Manager of the City of Charleston, W. Va. Many Practical Subjects on Mining Discussed by the Inspectors. Election of Officers for the Coming Year

BY JAMES T. BEARD  
New York City

THE Twelfth Annual Meeting of the Mine Inspectors' Institute of America was held at Charleston, W. Va., July 12-14, 1921. The First Vice President, Charles H. Nesbitt (Alabama) in the chair. Mr. Nesbitt congratulated those present on the privilege of coming to Charleston, where they had met ten years previously (1911) and then introduced E. F. Morgan, governor of the State of West Virginia as the first speaker.

Governor Morgan opened his remarks by welcoming the visiting members of the Institute to Charleston and extending to them the freedom of the city. He then spoke of the wonderful development in mining coal, particularly in the State of West Virginia, which he was proud to say had become the second coal-producing state in the Union. He alluded to the efforts put forth by coal operators in making the mining towns and camps in the state attractive to their employees. In many cases, he stated the operators were paying for school teachers out of their own pockets. Speaking of the mines and the efforts of operators to make them safe and healthful places in which to work and the many improvements that had been made in the equipment and methods of working, the governor deplored the accident rate, which he believed was largely due to the carelessness of many miners who had come to disregard danger and were prone to neglect the simplest precautions to insure their own safety.

The chairman then introduced City Manager, Bonner H. Hill, who was formerly a chief mine inspector in the state. In his remarks, Mr. Hill assumed a reminiscent attitude comparing the past with the present and calling attention to the improvements that had been made in the methods of mining and loading the coal. In a happy way Mr. Hill alluded to the co-operation of a large class of the miners and hoped that this would continue to grow and increase as time went on, which would mean greater safety and fewer accidents.

Following these addresses of welcome on behalf of the city, chairman Nesbitt called on Dr. J. J. Rutledge (Illinois) and J. T. Beard (New York), who responded, in turn, on behalf of the Institute. Dr. Rutledge, speaking from his experience in the employ of the Federal Bureau of Mines,

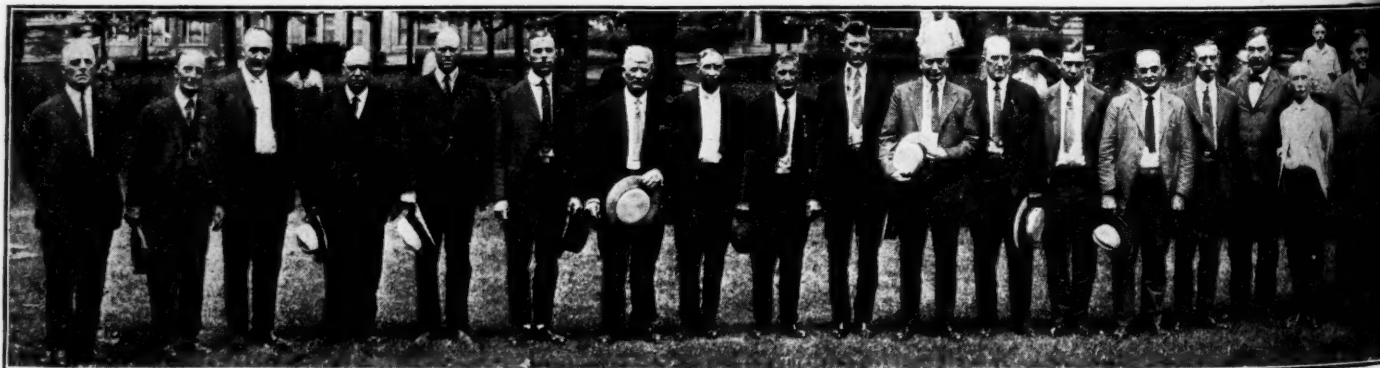
referred to mine inspectors as standing between the coal operators, on the one hand, whose interest lay in the economical extraction of the coal, the commonwealth, including the public who were the consumers and the mine workers who produced the coal. He emphasized the fact that the first duty of the mine inspector was to safeguard life and property.

Mr. Beard referred to the work that had been accomplished by the Institute since its organization, in 1908, at Indianapolis. He spoke particularly on the continued efforts put forth each year by the Institute, in co-operation with the Federal Department of Mines and other mining organizations, to secure and establish greater uniformity in the mining laws of the several coal-producing states. He emphasized the fact that there were certain features, in the work of mining, that were common to all mining states and urged that, in respect to these features, the mining laws of all states should be uniform, in the interest of safety and the conservation of the coal.

Before adjournment was taken for the noon recess, Chairman Nesbitt appointed the following as a membership committee: J. J. Rutledge (Illinois), chairman; Frank Hillman (Alabama); James Sherwood (Kansas).

When the afternoon session convened, at 2 o'clock, the Committee on Membership reported favorably the following names and the persons so reported were elected members of the Institute:

R. M. Lambie, Chief, Dept. of Mines, Charleston, West Virginia.  
L. Blenkinsopp, Chief Inspector of Mines, Lexington, Kentucky.  
G. Chester Brown, Chief Mine Inspector, San Francisco, California.  
Robert Lilly, Dist. Mine Inspector, Mt. Hope, West Virginia.  
V. E. Sullivan, Dist. Mine Inspector, Beckley, West Virginia.  
M. E. Quenon, Dist. Mine Inspector, Charleston, West Virginia.  
Thomas Stockdale, Dist. Mine Inspector, Bramwell, West Virginia.  
William D. Lee, Dist. Mine Inspector, Iaeger, West Virginia.  
M. B. Coulter, Dist. Mine Inspector, Moundsville, West Virginia.  
S. E. Hawkshaw, Dist. Mine Inspector, Thomas, West Virginia.  
W. B. Riggelman, Dist. Mine Inspector, Fairmont, West Virginia.  
Lance B. Holliday, Dist. Mine Inspector, Mullins, West Virginia.  
Harry M. Black, Director Mine Rescue Station, Charleston, West Virginia.  
W. H. Sandridge, Dist. Mine Inspector, Grafton, West Virginia.  
J. W. P. St. Clair, Dist. Mine Inspector, Williamson, West Virginia.



READING LEFT TO RIGHT THE PICTURE SHOWS—

Evan L. Griffiths, District Mine Inspector, Clarksburg, W. Va.  
L. B. Holliday, District Mine Inspector, Whitesville, W. Va.  
W. B. Riggelman, District Mine Inspector, Fairmont, W. Va.  
J. P. White, District Mine Inspector, Logan, W. Va.  
Carl Cole.  
A. W. Fluegel, Gen. Supt. Paint Creek Coal Mining Co., Gallagher, W. Va.  
V. E. Sullivan, District Mine Inspector, Beckley, W. Va.  
W. D. Lee, District Mine Inspector, Iaeger, W. Va.  
Zach Evans, District Mine Inspector, Handley, W. Va.

Twelfth Annual Meeting Mine Inspectors

M. B. Coulter, District Mine Inspector, Moundsville, W. Va.  
Eli J. Mason, District Mine Inspector, Charleston, W. Va.  
Elmer K. Rupp, Managing Editor, Coal Trade Bulletin.  
J. S. Rogers.  
James Sherwood, Chief Inspector Kansas Department of Mines.  
Oscar Cartledge, Asst. Gen. Mgr., Raleigh-Wyoming Coal Co., Charleston, W. Va.  
Dr. J. J. Rutledge, United States Bureau of Mines.  
J. T. Beard, Associate Editor, Coal Age.



Zach Evans, Dist. Mine Inspector, Handley, West Virginia.  
 A. P. Burdiss, Dist. Mine Inspector, Beckley, West Virginia.  
 Evan L. Griffiths, Dist. Mine Inspector, Clarksburg, West Virginia.  
 Pete McLinden, Dist. Mine Inspector, Welch, West Virginia.  
 J. A. Porter, Dist. Mine Inspector, Gauley Bridge, West Virginia.  
 Eli J. Mason, Dist. Mine Inspector, Charleston, West Virginia.  
 J. F. White, Dist. Mine Inspector, Logan, West Virginia.  
 James Golden, Dist. Mine Inspector, Morgantown, West Virginia.  
 J. S. Rogers, Inspector, Associated Companies, Pittsburg, Kansas.  
 R. B. Cobb, Ex. Dist. Mine Inspector, Charleston, West Virginia.

A paper entitled "Interchangeable Certificates for Mine Foremen and Firebosses Between the States," was read by R. M. Lambie, chief of the Department of Mines of West Virginia, Messrs. Sherwood, Rutledge, Cartledge, Sullivan, Beard, Paul and Vaughn leading the discussion.

Informal discussion of a paper entitled "How Best to Secure Co-operation of the Miners and Operators in a Full Compliance with the Mining Laws," by President Watson followed by Oscar Cartledge, Hillman, Paul and Sherwood.

An informal smoker, in the evening provided entertainment for the guests. C. E. Krebs, assistant State Geologist gave a lecture on the "Geology of the Coal Measures in the Kanawha Valley."

When the Institute convened the following morning (Wednesday, July 13) the chairman announced the appointment of the following as a committee on resolutions: J. T. Beard, chairman; R. M. Lambie and Oscar Cartledge. The following were appointed as auditing committee; James Sherwood; Frank Hillman and V. E. Sullivan. Secretary Paul then read his report, including a statement of the financial condition of the treasury, which was referred to the auditing committee.

Next on the program was a discussion of the question "Should Flame Safety Lamps Be Discarded for Electric Lamps, Except for Testing Purposes?" The discussion was opened by Secretary Paul who was followed by Rutledge, Beard, Griffiths, Hillman, Sherwood, Sullivan, Lambie, Vaughn and Cartledge. The views expressed in the debate of this question showed a variety of opinions and gave much food for thought. The afternoon session was devoted to the discussion of "How Accidents at the Working Face May Be Reduced." The subject had been assigned to Lawson Blenkinsopp, chief inspector of mines for the State of Kentucky, who was unable to attend the meeting, owing to illness in his family. In his absence, the discussion was opened by J. F. White, who was followed by Sherwood, Hillman, Sullivan, McLinden, St. Clair, Mason, Absalom, Stockdale and Vaughn.

The final subject for discussion was then announced as "The Technical and Practical Qualifications of an Ideal Mine Inspector," which was opened by Secretary Paul who outlined two or three essential qualities that every mine inspector should possess. He was followed by Messrs. Beard, White and Vaughn, each of whom contributed some new and important quality that marks the successful and efficient inspector of mines.

At 3:45 the meeting adjourned, for the day, to accept the invitation of the Entertainment Committee and enjoy a boat-ride on the beautiful Kanawha River. The barge "Sunbeam" had been chartered by the committee, and the mine inspectors and their friends were taken a distance of ten miles up the river, returning by 8 o'clock in the evening. Music and ample refreshments were furnished on board the boat, and the occasion was one much enjoyed by all present.

The following morning (Thursday, July 14), the Institute listened to the report of the committee appointed a year ago to consider the question of "Standardization of Mine Inspection." Owing to the death of H. M. Wilson, chairman of the committee, and the sickness of W. E. Holland, it had been necessary to re-organize the committee, which now consisted of J. J. Rutledge, chairman, James Sherwood and J. F. Rogers, who acted for Mr. Holland.

Much work had been done by the original committee and the report now presented include a tentative form of inspection routine recommended by the committee for the use of inspectors in coal mines. After a brief discussion by Sullivan, Sherwood, Paul and Carl Scholz the report was adopted tentatively, and the committee asked to continue its work and report further if it was deemed advisable.

Officers for the coming year are: C. H. Nesbitt (Alabama), president; R. M. Lambie (West Virginia), first vice president; W. E. Holland (Iowa), second vice president; James Sherwood (Kansas), third vice president; J. W. Paul (Pennsylvania), secretary; V. E. Sullivan (West Virginia), assistant secretary; J. F. Rogers (Kansas), treasurer; J. T. Beard (New York), editor in chief. Next years meeting of the Institute will be held in Chicago.

### RESOLUTIONS

WHEREAS, since our last meeting at Cleveland, Ohio, God in his infinite wisdom has removed from our number a devoted and earnest fellow-worker and honored member of the Institute; therefore be it

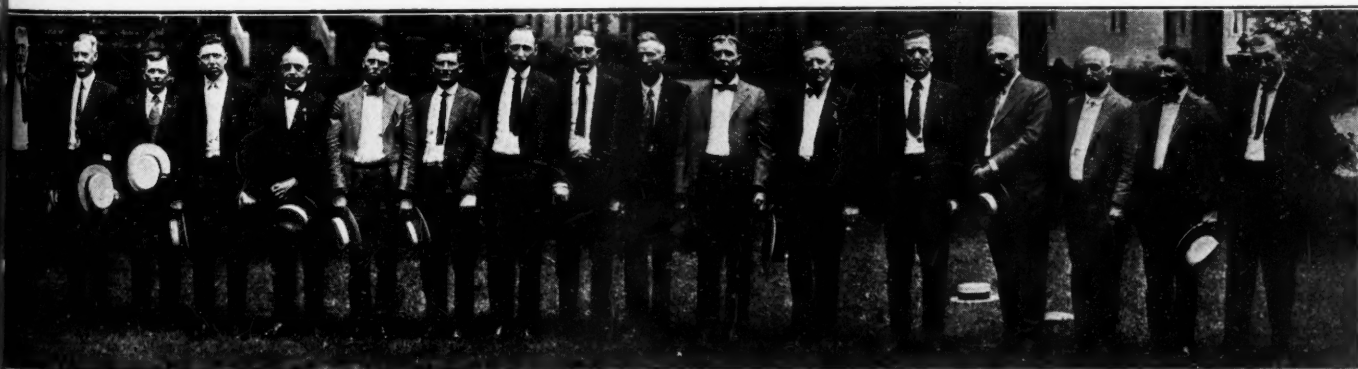
RESOLVED that in the death of HERBERT M. WILSON, which occurred November 25, 1920, the Mine Inspectors' Institute of America has lost a valued and helpful co-worker, one who was experienced in all that pertains to the safe operation of mines and gladly gave of his best efforts to the work.

The Institute extends to the bereaved family and friends of the departed one its heartfelt sympathy.

Recognizing the need of certain essential requirements to insure greater safety in the mining of coal, and believing that these requirements apply to all coal mines alike, it is the sense of the Mine Inspectors' assembled at the Charleston (1921) meeting that these particular requirements should be incorporated in a uniform Coal-Mining Code to be submitted for endorsement by the mining departments and recommended to be incorporated in the mining laws of each several coal producing state. Be it therefore

RESOLVED, That a uniform code of mining coal may well include the following requirements looking to providing a greater degree of safety in the mines:

1. A clear and practical classification of the mines of the state, with respect to the generation of gas that makes it necessary



Institute of America, Charleston, W. Va., July 12-15, 1921.

C. E. Krebs, Charleston, W. Va.  
 Ex-Governor Atkinson, of West Virginia.  
 J. W. Paul, U. S. Bureau of Mines, Secretary of Institute.  
 Frank Hillman, Deputy Chief Inspector Alabama Department of Mines.  
 R. M. Lambie, Chief of Department of Mines, Charleston, W. Va.  
 H. M. Black, Director of Mine Rescue Stations, Charleston, W. Va.  
 A. P. Burdiss, District Mine Inspector, Thurmond, W. Va.  
 M. E. Quenon, District Mine Inspector, Charleston, W. Va.  
 J. W. P. St. Clair, District Mine Inspector, Williamson, W. Va.

Pete McLinden, District Mine Inspector, Welch, W. Va.  
 J. A. Porter, District Mine Inspector, Gauley Bridge, W. Va.  
 R. B. Cobb, Charleston, W. Va.  
 John Douglas, Charleston, W. Va.  
 Robert Lilly, District Mine Inspector, Mount Hope, W. Va.  
 S. E. Hawkshaw, District Mine Inspector, Thomas, W. Va.  
 Thomas Stockdale, District Mine Inspector, Bramwell, W. Va.  
 W. H. Sandridge, District Mine Inspector, Grafton, W. Va.  
 James Golden, District Mine Inspector, Morgantown, W. Va.

to adopt precautions, in the operation of certain mines, that are not required in other mines of the state.

2. Providing for the sole use of permissible powders, in blasting the coal.

3. Providing for the employment of shotfirers, who shall examine charge and fire all holes drilled by the miners, in mines of a given class to be specified by the state law in its classification.

4. Forbidding the use of mixed lights in mines.

5. Providing for a system of ventilation based on a standard quality of air and specifying such a distribution of the air currents that shall afford a sufficient and safe velocity at the working faces.

6. Prohibiting the practice of "shooting off the solid," in the mining of coals other than anthracite, and requiring the mining or sidecutting of all shots to a depth at least equal to the depth of the hole to be fired, except in the case of a "grip shot" in an irregular face of coal, and in pillar work, or when shooting a loose end.

7. Providing for the examination and certification of all persons who are in charge of work underground, or who control and direct such work as relates to the safety of employees. This means that no uncertified superintendent shall assume control of operations in charge of the mine foreman.

WHEREAS, following a practical discussion of the relative merits of the mine safety lamp and the electric cap lamp now being introduced so largely into the mines, the Mine Inspectors attending the Charleston (1921) meeting offer the following as their conclusion and belief regarding the use of these lamps in mines generating explosive gas;

RESOLVED that the flame safety lamp, which is still in use as a working lamp in many mines, should be discarded and no longer

used, except for the purpose of testing for gas; and, instead, electric lamps approved by the Federal Bureau of Mines should be installed and used as working lamps, in all mines, provided the regular and frequent inspection of the working places is made, by competent safety inspectors, by means of gauze safety lamps.

WHEREAS, realizing the value of the Mine Inspectors' Institute of America to the mining department of every state, as a means of securing needed information relating to the safety of mining; be it hereby

RESOLVED that the government of every state engaged in mining should send a suitable delegation to the annual meetings of the Institute, and make possible their attendance by providing for their necessary expenses. The information gained through such representation will pay for the time and money spent.

RESOLVED, further, that the director of the Federal Bureau of Mines, H. FOSTER BAIN, be urged by our secretary to use his good offices to bring this matter effectively before the governing authorities of all mining states, in behalf of the Institute.

Having enjoyed a most pleasing and profitable session, we, the visiting members of the Mine Inspectors' Institute of America, in attendance at its Twelfth Annual Meeting, held at Charleston and now drawing to a close, desire to express to the Mine Inspectors' Association of West Virginia, Victor E. Sullivan, president, and to R. M. Lambie, chief of the Department of Mines, and others who have lent their aid, our hearty appreciation of the generous and delightful entertainment they have afforded, and to say the occasion will long be remembered by all present.

J. T. BEARD, Chairman  
OSCAR CARTLIDGE,  
R. M. LAMBIE.

## Iowa Shippers Offer Home Product at Low Freight To Cut Householders' Fuel Cost

BY H. S. DRAKE

Des Moines, Ia.

**D**URING the war and particularly during the period when the Fuel Administration functioned so splendidly to conserve and utilize all of the potential coal supply of the country, when there were other restrictions than the Eighteenth Amendment on the "do as you please" dispositions of the people, there were many in the coal trade who predicted that the demand for shipment of soft coal from Eastern fields to and beyond other producing localities would never again be revived to a great extent, at least not for domestic use. In short, it then seemed that the consumer had learned the extravagance of going beyond his own neighborhood mines for household coal. However, the experience of the past two years indicates that many people are again following their old habits, as a result perhaps of the intensive advertising by the producers of certain coals specially prepared, and now prefer coal from a particular state or of a certain trade name, because they have come to believe that such coal is better suited to their needs.

The thought presents itself as to whether the consumer who demands such brands and trade names knows what he is getting in heat value for his money. If not, what is the producer in the areas nearer by doing to correct the mistaken belief, if there is one, and to show his product to the buyer in a true dollars and cents comparison?

### COAL COST PER THERMAL UNIT IS BEST TEST

With this in mind, Iowa suggests itself as a locality where such a campaign of education might be productive of results. Based on present market prices for Iowa and Illinois coal, in which the Iowa price at the mine is higher than Illinois, and on present freight rates, there is no Illinois coal yielding as many B.t.u. for one cent at Des Moines, Iowa, as will coal from any locality in that state. The advantage in favor of Iowa coal ranges from 200 to 8,200 B.t.u. for one cent, with an advantage over the Illinois field most favored by users of 4,550 B.t.u. per penny of cost.

A number of operators and jobbers in Iowa were asked whether they realized these facts and, if so, what was being done to inform the retail dealers and, through them, the

consumers. Replies indicate that only a few are making any particular effort in this direction, some seeming content to take for granted that the public knows that the product of Iowa mines is "really about as good as that of other nearby states."

One operator and a jobber, who have studied the situation and are convinced that the general public will burn something cheap—cheap in the sense that the cost is low—to keep them warm during the coming winter, have sent letters to dealers over the state suggesting this and driving home the oft repeated message that a portion of the winter's coal must be moved during the summer. These men felt that a short snappy letter, which would attract the dealer's attention by suggesting the facts, would produce results in orders better than a longer statement involving the recitation of statistics.

One of the letters started with the statement that when the first snow covers up the chips and corn cobs in the back yards, there will be a rush for coal, and followed with the suggestion that the farmer, as well as city and small town consumer, will not buy the long haul, high freight rate stuff, but the coal he can get at the lowest price per ton.

### PLAY UP LONG HAUL TO ILLINOIS' DISADVANTAGE

Another wholesaler addressed a letter to dealers, requesting a reply, asking if it was not their opinion that the people would buy low priced coal, not high priced freight, this year. The psychology of his argument being that if he could suggest the text and induce the dealer to write the letter, he would have an opportunity to come back with a compliment on the dealer's judgment and presentation of the facts. This, it seems, would create a more lasting impression in the dealer's mind, which he would gradually impart to his customers, and thus a permanent preference would be established for the low freight rate product. That is the way the present preference for high freight, trade named coals was established; by constantly telling the dealer and his customer that such coals are better.

Both of these letters got results, orders and replies, which will multiply into more orders.



One retail dealer sold a considerable amount of summer coal through a letter with which was enclosed a copy of a cartoon by Churchill, reprinted from *Coal Scoop*, which vividly pictures the apathy of the consumer waiting for freight rates to be reduced and urges him to heed the pleas of retailers, railroads and operators to buy the winter's supply of coal during the summer months, when the retailer has it, the railroads can haul it and while prices are low. The companion picture shows the same consumer, when the first cold snap comes, now greatly agitated and crying for government regulation of the coal business, at sight of notices that "prices are higher on account of scarcity" and "no reduction in freight rates." In the accompanying letter attention is directed to the customary last-minute rush for coal, with the attendant shortage and increased price, and the suggestion that at least part of next winter's supply be put in now.

#### PROGRAM COULD BE USED IN OTHER LOCALITIES

Perhaps some such concrete program, more properly called educational than propaganda, might be adopted and followed by the trade in other localities, varying the argument to suit the local conditions.

In Iowa the car situation is usually not so much a problem as in most other fields. The mines have smaller individual capacities and three-day delivery is the average all over the state, allowing almost weekly return trips for cars from mines to delivery and back to be loaded again. There are not many industries in the state calling for open top cars for shipment out of the state and such cars as are routed away are usually replaced by those coming in with coal from other fields and some returning empty from points farther west and northwest, where they were shipped from Eastern markets with coal of particular kinds and grades; gas coal, for instance.

#### GULF BETWEEN DIGGING COST AND COST-ON-CARS

The price of a ton of coal to the consumer, as compared with the contract mining rate is one subject that, it seems, should be explained more fully and frequently to the buyer. There is an attitude on the part of certain miners' union officials to discredit the operators at every opportunity by stating in interviews that increases in the price of coal to the retail trade are not justified by the increases given the diggers of the coal. The public should be made to understand what the contract rate is and that it represents only about one-half the direct cost of coal at the mines. In Iowa the diggers or contract miners represent but 48 per cent of the men employed at the mines, while in Illinois it is understood that this percentage is somewhat higher. The items making up overhead and indirect costs should also be explained and definite statement made showing why these costs cannot be eliminated from the price to the ultimate consumer. Average per ton costs showing where the money really goes might well be published frequently.

#### GOOD RESULTS BELIEVED TO BE INEVITABLE

Can better use be made of the information regularly collected and tabulated by the various associations in the trade than to distribute it in an understandable form and stripped, so far as possible, of all technical terms? An educated general public will do almost as much to forestall regulation of the trade that has been threatened for more than a year, as will expensive and uncertain lobbies.

The conclusion seems almost unavoidable that only good for the trade can result from a campaign of education for the users of coal to the end that they buy the coal which will best serve their needs at the least outlay of money.

The individual who finds his winter's coal bill a hundred dollars less than last year will not be one of those condemning the whole coal trade as robbers, but it is probable that the one who has tried to keep his family warm with a last portion of high-priced freight included in his bill will not take the trouble to analyze the situation to learn why his outlay was so much more than his neighbor who was just as warm. The consumer can only measure the freight he burns by his bank account.

## Operators in State of Washington Sever All Relations with Union

WASHINGTON commercial-coal operators have issued notices to the public and to their employees declaring that they will no longer run union mines and that they will pay a scale of wages proposed by the neutral member of the coal commission which is as follows: Contract miners under piece-work rates, between \$7 and \$14 per day; day men (underground), \$6; common labor (underground), \$5.25; day men (above ground), \$6; common labor, (above ground), \$4.50. The operators declare that these wages compare favorably with those in other industries and promise to cut prices as much as the wage reduction will permit.

The operators of commercial mines declare that the union has disregarded the principle of collective bargaining for that of dictation, that it has refused to bargain with the employees for a new wage scale or to consider any reduction of wages despite the need for a new scale as shown by the report of the joint commission appointed by the Director of Labor and Industries of the State. They add that the union has refused to permit the men employed by the idle mines a chance to vote on the question of returning to work at the wage scale just given, which, as stated, was proposed by the neutral member of the coal commission.

The operators declare that the United Mine Workers of America have admitted that the refusal to permit of a readjustment of the wage scale is actuated by a desire to protect the interests of the organization in other states which would be asked to grant reductions in those sections if decreases in wages were allowed in the State of Washington. "It has," they say, "become increasingly evident, not only in connection with the present controversy but by reason of accumulative experience over a number of years that the policy of the United Mine Workers of America is not one of consideration for the interests of the industry and of its members in this district, but one under which those interests are sacrificed to the interests of that organization in remote districts."

As stated by the operators efforts were made in January and February to induce the national and district officers of the United Mine Workers to enter into negotiations for a new wage scale. After 60 days' effort the attempt failed. In a circular dated Feb. 28 the operators proposed that the wage scale of October, 1919, be made effective, saying that the mines must be closed down if the proposition was not accepted. As no favorable action was taken the mines were closed on Mar. 15.

#### MINERS REPORT COAL SITUATION DISCOURAGING

In April at the request of Edward Clifford, Director of Labor and Industries of the State of Washington, the operators consented to the formation of a commission composed of two representatives of the operators and two of the mine workers and a representative of the Department of Labor and Industries. After a full investigation the commissioners submitted a unanimous report of facts which fully justified the previous contentions of the operators showing that the situation was a critical one, the mine-worker members in their communication of June 30 to Mr. Clifford saying that "our investigation has revealed a condition of affairs which we are frank to state is more discouraging than we had anticipated."

Based on this report the member of the commission representing the Department of Labor and Industries recommended a wage scale under which it would be possible to operate. The operators accepted the scale but the United Mine Workers of America for five weeks delayed its acceptance. Finally a convention by refusing to recommend the acceptance of the proposed scale and also by refusing to consider any reduction in wages whatsoever finally closed the door to any possible settlement with the organization.

The operators say that at an appropriate time and as soon as possible after resumption of operations their employees will be invited to select representatives to meet the operators and work out a plan of organization which will embody the principle of collective bargaining and assure them a voice in the discussion of mutual problems.

# Repeal of Excess-Profits Tax Would Attract Capital Necessary for Industrial Rehabilitation

BY PAUL WOOTON

Washington Correspondent

**W**HILE opposition of considerable proportions has arisen against the proposed repeal of the excess-profits tax, most students of tax problems, regardless of political party, agree that the repeal of this tax will do more to bring about a return of industrial prosperity than would nearly any other one thing that could be done at this time. The debate in the House brought out many facts and figures with regard to the working of the excess-profits tax, all of which tend to the conclusion that it was a war tax, justified only by the stress of the time, and in no way adapted to peace-time conditions. The revelations which have come as a result of the recent concentration of thought on this subject indicate that the tax should have been repealed long ago and supplanted by a more scientific form of taxation.

There is concrete evidence that the excess-profits tax has led to great extravagance in business and it is blamed for the period of intense speculation which followed the war. One of its good effects, however, is that in their effort to avoid having excess profits, industries have entered upon improvements and betterments such as never would have been undertaken otherwise.

## CAPITAL DRIVEN FROM INDUSTRY TO TAX-FREE BONDS

Big business does pay a considerable portion of the money collected under the excess-profits tax, but as the tax was tending more and more to drive capital away from industry and into tax-free bonds, the public at large has suffered because of the great reduction in industry which has come from lack of capital. Witnesses before the Committee on Ways and Means declared that the excess-profits tax and the high surtaxes on individual incomes had removed every incentive for the holders of accumulated capital to continue to put their money in businesses.

It is estimated that nearly \$15,000,000,000 now is invested in tax-free securities. A considerable portion of that amount now has been withdrawn from active industrial enterprises. Capital for investment is commanding almost prohibitive rates of interest. An example of the inducement to invest in tax-exempt securities is had by citing the fact that a man of large means would have to invest his money so as to earn 16.67 per cent in order to yield him the return that a 4½ per cent municipal bond would mean to him. Any business venture which would yield 16 per cent on the investment necessarily would carry with it great risks, while the municipal bond possesses no element of risk.

While there is no disputing that large organizations pay a considerable portion of the excess-profits tax, the figures show that this is due to the high earning power of certain of the great low-cost organizations, as a larger percentage of the smaller corporations make very high profits.

## DISCRIMINATION AGAINST FIRMS WITH SMALL CAPITAL

Another objectionable feature to the excess-profits tax is the uncertainty as to what it will amount to at the end of the year. Since these corporations do not know how much they will have to pay out under this tax, the tendency is to overestimate probable assessments. The inequalities of the tax and its discrimination against the corporation with a small invested capital has been the source of much discontent. The abandoning of "invested capital" as a basis for computing tax deductions will simplify the corporation tax statements and will remove a prolific source of tax discrimination.

Nevertheless there are two sides to the question. The other side of the proposition was set forth with particular clearness by Representative Frear, of Wisconsin, during the debate in the House. A part of Mr. Frear's argument is as follows:

"A debt of \$24,000,000,000 is a reminder of the war that must be met and explains the absolute necessity of levying unusual and sufficient taxes in peace times for years to come in order to meet unusual obligations. Unexampled business activity and enormous business profits enjoyed during and after the war under existing law contradict the argument offered for tax reduction in order to help business. Depressed business conditions are found throughout the world to-day, an aftermath of war, although Germany with a \$35,000,000,000 debt and unprecedented taxes has practically resumed prewar business activities according to report. Present business conditions are not caused by taxes but are due to a variety of well-known contributing causes, including world-wide business depression and deflation.

"Everybody desires to reduce or remit taxes wherever possible to do so, and a heroic effort to please people generally has been made, but repeal of the excess-profit tax and other taxes has been opposed in the committee, first, because the excess-profits corporation tax is imposed only after 8 per cent profits and other exemptions have been deducted. It is based on taxation of excess profits on the same principle governing personal income surtaxes—ability to pay; second, if the excess-profits tax is repealed, then it ought not to occur before Jan. 1, 1922.

"The demand for its repeal has universally been based on the claim, whether real or mistaken, that the excess-profits tax is always passed on to the ultimate consumer. If true, in whole or in part, on what theory can Congress repeal a tax that will have been collected from consumers throughout the entire year of 1921 only to be retained as a gratuity from Congress? In other words, if a 1921 excess-profits tax of \$450,000,000 has been passed on the consumer this year, then by repealing that law as of Jan. 1, 1921, we will make an enormous gift to the corporations, based on the actual proportion of taxes collected by them from consumers prior to passage of the bill.

"The significance of this proposal as embodied in the bill presents a political and economic liability well worth considering."

## PROVISIONS OF REVENUE BILL INTEREST COAL MEN

It was expected that a vote would be taken by Saturday, Aug. 20, in the House on the revenue bill. Some of the main provisions of interest to coal producers as individuals and as corporation investors or managers, aside from the proposed repeal of the excess-profits tax, are:

Reducing the surtax on individuals to a maximum of 32 per cent upon amounts by which net income exceeds \$66,000.

Increasing from \$2,000 to \$2,500 exemption of married persons or heads of families whose net income is below \$5,000, and increasing from \$200 to \$400 the exemption for each dependent.

Providing for deduction of a net loss from the net income of the succeeding taxable year, and where such loss is in excess of net income for such succeeding year providing for carrying forward such excess as a credit against succeeding taxable year.

Repealing transportation tax as of Jan. 1, 1922.

Reducing time limit for determination and assessment of taxes to three years in the future.

Providing for an agreement in writing between taxpayer and revenue commissioner to have effect of final and conclusive settlement.

Clarifying provisions relating to determination of gain and loss, deductions and credits, etc.

Increasing the normal tax on corporations to 15 per cent for the calendar year 1921 and each year thereafter.

Providing for a tax simplification board which is to simplify forms and procedure of the Revenue Bureau.



## 600 Connellsville Miners Quit When Wages Are Cut to \$3 a Day

SIX hundred mine workers laid down their tools Friday, Aug. 19, in the first strike in the Connellsville coal region since 1902, when employees of the Allison plant of the W. J. Rainey Co., Inc., refused to accept another wage reduction. The strikers called meetings at both the Mount Braddock and Rainey plants and expected to decide by Saturday night whether or not they would join in the walkout.

The new scale allows skilled miners slightly above \$3 a day for ten hours. During war times these men were receiving from \$8 to \$10 a day for eight hours.

Officials of the company said that if the strike were prolonged they would close their plants in Fayette County, including Revere, Paull, Mount Braddock, Allison, Elm Grove and Royal, and throw 2,500 men out of work.

## Wages of Two Million Workers Reduced 20 Per Cent Since Sept. 1, 1920

THE National Industrial Conference Board has recorded wage reductions in more than 500 instances from about Sept. 1, 1920, to Aug. 1, 1921. The number of commercially important plants affected is about 750, with more than 2,000,000 employees.

The average of the reductions is estimated at 20 per cent, ranging from as little as 5 per cent to as much as 30 per cent. The wave seems to have begun in the Middle West, spreading rapidly to the East and less rapidly to the West. The reductions, so far as the Board has observed them, seem to have affected all workers, skilled and unskilled, by about the same percentages.

## Fairmont-Clarksburg Region Getting Ready For Future Wage Conference

WHEN the Advisory Board of the Northern West Virginia Operators' Association met at Deer Park, Md., on Aug. 9, they decided that the officials of the mine workers were so determined to maintain wage levels that it was not worth while to continue the overtures which began late in June and have been persevered in ever since. The answer in West Virginia, as in Washington State and central Pennsylvania, is: Wage reductions are against the policy of the International organization and it is useless to try in any way to induce the Indianapolis officials to concede a separate scale to suit the needs of any special section.

There is no way out save abrogation of the present contract, but there is a sentiment that what has ever been sacred to the union should be sacred to the operator. He must not break a contract even though it be one made under compulsion and to replace a contract which had not run out.

George S. Brackett, the secretary of the Northern West Virginia Operators' Association, has made a statement to the effect that a sub-committee of three men from the thick-vein district and three men from the thin-vein district has been appointed, to be known as the wage-adjustment committee, which has been instructed to prepare data and thoroughly familiarize itself with the mining conditions and wages paid in Ohio and western Pennsylvania, as well as in the non-union districts which surround and directly compete with northern West Virginia. The sub-committee consists of Tarleton (chairman), Ryan, Bischoff, Sandridge, Brady and Montgomery.

## Indiana to Meet Disorder by Force of Law

UNLIKE some sections, Indiana has, at least in Sullivan County, officials who are not disposed to allow disorder to get beyond control. The Sullivan County Board Commissioners have sworn in forty special deputies who will keep the peace under the orders of Sheriff Douthitt and have announced that they will swear in more when the three men who have been arrested for rioting are brought

to trial in the Circuit Court at Sullivan. The mine workers are planning to make a demonstration when the trial is held. In the disorder of the week before last, for which the three men are to be tried, several mine bosses and employees were driven out of the district.

## Army of Miners Would Descend on Mingo

ASSEMBLING from Paint Creek and Cabin Creek, 600 mine workers at Marmet prepared on Aug. 20, as in ex-Governor Cornwell's administration, to march on Mingo County through Boone and Logan counties. They were reinforced on Sunday, Aug. 21, by 400 men from the Cedar Grove region, who crossed the Kanawha River and improvised rafts. Armed guards are keeping the roads leading to the point of assembly, which is a hollow about a mile below the station at Marmet, and a correspondent who passed the guard was told to leave and was accompanied by two armed guards to the station.

This march is said to be a protest against martial law and the arrest of agitators. The march two years ago was started to stop alleged murders of women and children by the mine guards, rumors having been purposely floated to foster the movement. C. F. Keeney, president of the United Mine Workers in that district, No. 17, declares he has nothing to do with the proposed invasion and that he has not even been invited to attend at the rendezvous. He refuses to concern himself and will not stop this march as he did that on the previous occasion, though he doubts if the men can march the eighty miles before them without a commissariat.

Sheriff Don Chafin, of Logan County, is said to have five hundred deputy sheriffs armed with army rifles and machine guns. He has stationed them near a divide at Sharples, Logan County, where two years ago a similar invasion was headed off.

## American Wholesale Coal Association Meeting Postponed

THE meeting in Chicago of the executive committee of the American Wholesale Coal Association, called for Aug. 24, has been postponed until Aug. 30 and 31. This was done so that a meeting of the board of directors could be called for the same time. Due to the increased importance being attached to the coal exchange proposition, it was decided that both bodies should meet at this time to discuss that and other important matters.

BECAUSE OF THE LIMITATIONS IN GOVERNMENT SALARIES it is understood Secretary Hoover is having difficulty in finding a capable man with proper qualifications for the position of chief of the fuel export division in the reorganized Bureau of Foreign and Domestic Commerce. It is understood that this division will cover both coal and petroleum at first but may later be subdivided.

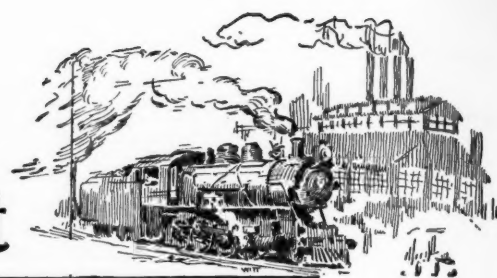
LOCHRIE ADVISED STICKING TO PRESENT WAGE.—Among the non-union operations in the central Pennsylvania field are those of the Lochrie and Berwind-White interests of Windber, Somerset County. They both pay the scale which is current in the union mines nearby. John Lochrie advises that, whether work remains slow or amends, the scale be maintained until April 1 of next year, when the agreement in the Central Competitive Field expires.

## Frelinghuysen Fails to Bring Coal-Stabilization Bill Back to Life

SENATOR FRELINGHUYSEN made an ineffectual attempt on Monday, Aug. 22, to call up his coal-stabilization bill in the Senate. He insisted upon a vote, and the proposal was overwhelmingly defeated. The vote was taken without roll call.



# Production and the Market



## Weekly Review

**P**RODUCTION of both hard and soft coal has hit the upgrade at last. Anthracite has not been in a serious slump, the let-up of early August having been but short-lived and small in proportion to the total. Without question, however, the worst of the mid-summer bituminous coal depression is over. With an output the second week of August of 7,726,000 tons, a gain of almost half a million tons over the average of the preceding five weeks, and with unmistakable evidence of quickening of inquiry and of buying, the turn may be said to have been passed. Each week hereafter may not show a greater output than the one before, but the general trend will be up from now on just as from the middle of May to the first half of August it was downward.

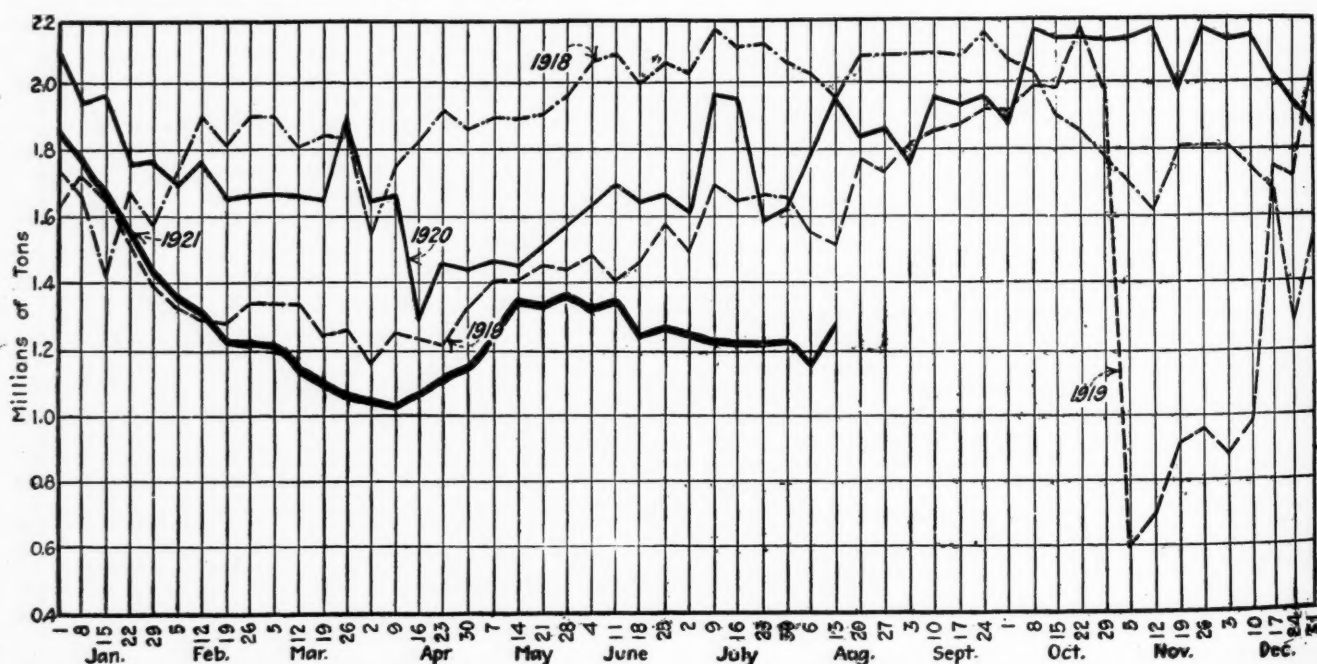
It is not yet possible to point definitely to each influence that is marking up demand for soft coal. Psychology, as usual, is called in to account for the attitude of buyers. Just now there is being felt the effect of the steady pressure of the advice to buy recently voiced by Secretary Hoover and the chairman of the Interstate Commerce Commission, as well as that of the large coal-carrying railroads. As September approaches and cooler weather is in prospect, thoughts are turning to coal. Railway fuel purchases are increasing and some improvement in demand from the steel industry is

noted, with prospects for more. Cement mills in the East are buying more coal. Business observers are advising that conditions generally confirm the belief that genuine business improvement is under way. Caution on the part of buyers is the part of good business as matters now stand. It is being pointed out that failure to observe caution a year ago was in a large measure responsible for the collapse and that any new buying now is positive indication of better times. Increased availability of credit and marked declines in money rates not only herald betterment in fundamental conditions but make possible the purchase of storage coal by industry.

### PRICES FAIL TO REFLECT CHANGE IN SENTIMENT

Prices do not as yet reflect the change in feeling—that is, coal is not being marked up on expectations. *Coal Age* index of spot prices of bituminous coal stood at 90 on Aug. 22, a drop of 2 points from 92 on Aug. 15. Local conditions account for this change. In New England all-rail coals from central Pennsylvania are down because of the flood of water-borne coal now available, both because the ocean freights from Hampton Roads are the lowest in years and because New England is the only market by water for coals from this port since export demand ceased. In the Midwest, where a few

Daily Average Production of Bituminous Coal\*



\*From weekly report of Geological Survey.



weeks ago screenings were at a premium because in small production, demand is now waiting for the usual fall rush for domestic sizes to produce a superabundance of fine coal at bargain prices; in consequence prices are off now.

Movement off the docks at the head of the Great Lakes is gaining and all reports indicate that that territory will have abundant coal, both hard and soft, this year. New England likewise appears to be very well stocked and continues to receive somewhat better than current needs.

### BITUMINOUS

As stated last week in this review, it is apparent that the low point of the mid-summer production decline has been passed. The output for the week ended Aug. 13 was 7,726,000 net tons, one-half million tons in excess of the figure for the last preceding week and the largest since the week ended June 11. The present rate of production, however, is far below that in other recent years. Even in the dull year of 1914 the August output averaged 8,700,000 tons per week. A slight decrease was reported in loadings for Monday and Tuesday of the third week in August.

Undoubtedly the depressed condition of industry is responsible for the subnormal rate of production, according

to the Geological Survey. May is the latest month for which consumption data are available. Fuel consumption by railroads in that month was about 81 per cent of the 1920 average; by electric utilities, 78 per cent, and for coke manufacture, only 38 per cent. "No-market" losses are still exacting a toll of more than 50 per cent of production capacity of min. operations.

Domestic demand appears to be awakening with the approach of autumn. Retailers find an increase of business, although it is still far below normal. A better line of inquiry is developing along the seaboard, which has had a tendency to stiffen prices. Cleveland reports show a more optimistic tone. Despite the decrease in Lake tonnage, production has even gained, showing that the industrial market is absorbing considerably more coal.

All-rail movement to New England continues to decline, as shown in the following table. Low marine freights are aiding shippers of water coal, who are making further inroads on the territory which for some time has been served by the all-rail central Pennsylvania coals.

### CARS OF COAL FORWARDED OVER THE HUDSON TO EASTERN NEW YORK AND NEW ENGLAND

Week Ended	1921		1920	
	Anthracite	Bituminous	Anthracite	Bituminous
July 30.....	2,543	3,029	2,806	6,368
Aug. 6.....	2,609	2,780	1,863	6,732
Aug. 13.....	2,313	2,560	2,230	6,124

### Current Quotations—Spot Prices, Bituminous Coal—Net Tons, F. O. B. Mines

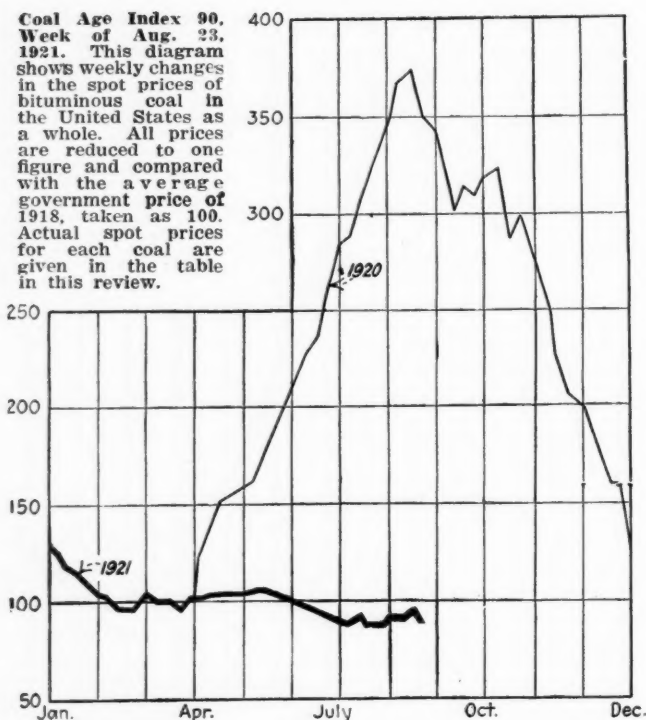
Low-Volatile, Eastern						High-Volatile, Eastern					
	Market Quoted	July 19, 1921	Aug. 9, 1921	Aug. 16, 1921	Aug. 23, 1921†		Market Quoted	July 19, 1921	Aug. 9, 1921	Aug. 16, 1921	Aug. 23, 1921†
Pocahontas lump.....	Columbus.....	\$5.65	\$5.15	\$5.20	\$5.00@ \$5.45	Pitts. No. 8 mine run.....	Cleveland.....	\$2.20	\$2.30	\$2.30	\$2.25@ \$2.35
Pocahontas mine run.....	Columbus.....	3.15	2.90	3.00	3.00@ 3.25	Pitts. No. 8 screenings.....	Cleveland.....	1.25	1.80	1.80	1.75@ 1.90
Pocahontas screenings.....	Columbus.....	2.30	2.15	2.40	2.25@ 2.60	<b>Midwest</b>					
Pocahontas lump.....	Chicago.....	5.00	5.00	5.25	4.75@ 5.25	Franklin, Ill. lump.....	Chicago.....	3.55	3.55	3.80	3.00@ 4.05
Pocahontas mine run.....	Chicago.....	2.75	2.75	3.00	2.25@ 3.25	Franklin, Ill. mine run.....	Chicago.....	3.00	3.15	3.30	2.25@ 3.50
*Smokeless mine run.....	Boston.....	5.85	5.60	5.50	5.40@ 5.50	Franklin, Ill. screenings.....	Chicago.....	1.95	1.85	1.75	1.15@ 2.65
Clearfield mine run.....	Boston.....	2.00	1.90	1.90	1.40@ 2.10	Central, Ill. lump.....	Chicago.....	2.50	2.75	2.90	2.00@ 3.00
Cambria mine run.....	Boston.....	2.70	2.55	2.55	2.15@ 2.70	Central, Ill. mine run.....	Chicago.....	2.40	2.20	2.15	2.00@ 2.75
Somerset mine run.....	Boston.....	1.80	1.70	1.70	1.40@ 1.75	Central, Ill. screenings.....	Chicago.....	1.75	1.60	1.55	1.00@ 2.25
Pool 1 (Navy Standard).....	New York.....	2.90	3.15	3.15	3.00@ 3.40	Ind. 4th Vein lump.....	Chicago.....	2.80	3.60	3.60	2.35@ 3.50
Pool 1 (Navy Standard).....	Philadelphia.....	2.80	2.95	2.95	2.85@ 3.00	Ind. 4th Vein mine run.....	Chicago.....	2.50	3.10	3.10	2.25@ 2.75
Pool 1 (Navy Standard).....	Baltimore.....	2.60	2.45	2.50	2.50	Ind. 4th Vein screenings.....	Chicago.....	1.85	2.15	2.15	1.00@ 2.15
Pool 9 (Super. Low Vol.).....	New York.....	2.50	2.55	2.55	2.30@ 2.80	Ind. 5th Vein lump.....	Chicago.....	2.75	2.90	2.90	2.25@ 3.25
Pool 9 (Super. Low Vol.).....	Philadelphia.....	2.40	2.35	2.35	2.25@ 2.40	Ind. 5th Vein mine run.....	Chicago.....	2.40	2.45	2.45	2.00@ 2.75
Pool 9 (Super. Low Vol.).....	Baltimore.....	2.35	2.20	2.25	2.25@ 2.30	Ind. 5th Vein screenings.....	Chicago.....	1.75	1.65	1.65	1.35@ 2.15
Pool 10 (H. Gr. Low Vol.).....	New York.....	2.20	2.35	2.25	2.00@ 2.65	Standard lump.....	St. Louis.....	2.25	2.20	2.65	2.50@ 2.75
Pool 10 (H. Gr. Low Vol.).....	Philadelphia.....	2.20	2.05	2.05	1.90@ 2.15	Standard mine run.....	St. Louis.....	1.70	1.75	1.75	1.75@ 1.90
Pool 10 (H. Gr. Low Vol.).....	Baltimore.....	2.00	2.00	2.10	2.15	Standard screenings.....	St. Louis.....	0.85	1.15	1.10	1.00
Pool 11 (Low Vol.).....	New York.....	2.00	1.95	1.95	1.85@ 2.25	West. Ky. lump.....	Louisville.....	2.75	3.00	3.00	2.75@ 3.75
Pool 11 (Low Vol.).....	Philadelphia.....	1.90	1.75	1.75	1.75@ 1.85	West Ky. mine run.....	Louisville.....	2.25	2.25	2.45	2.25@ 3.00
Pool 11 (Low Vol.).....	Baltimore.....	1.75	1.70	1.75	1.85	West Ky. screenings.....	Louisville.....	1.60	1.70	1.70	1.00@ 2.25
<b>South and Southwest</b>											
Pool 54-64 (Gas and St.).....	New York.....	1.70	1.85	1.85	1.70@ 2.20	Big Seam lump.....	Birmingham.....	3.65	3.75	3.75	3.25@ 4.20
Pool 54-64 (Gas and St.).....	Philadelphia.....	1.75	1.65	1.65	1.60@ 1.75	Big Seam mine run.....	Birmingham.....	2.15	2.15	2.15	2.00@ 2.25
Pool 54-64 (Gas and St.).....	Baltimore.....	1.50	1.50	1.60	1.65	Big Seam (washed).....	Birmingham.....	2.30	2.40	2.40	2.25@ 2.50
Pittsburgh sc'd gas.....	Pittsburgh.....	2.95	2.70	2.70	2.60@ 2.80	S. E. Ky. lump.....	Louisville.....	3.40	3.60	3.65	3.50@ 3.75
Pittsburgh mine run (St.).....	Pittsburgh.....	2.10	2.10	2.10	2.00@ 2.15	S. E. Ky. mine run.....	Louisville.....	2.20	2.30	2.35	2.25@ 2.40
Pittsburgh slack (Gas).....	Pittsburgh.....	1.45	1.70	1.70	1.65@ 1.75	S. E. Ky. screenings.....	Louisville.....	1.50	1.65	1.70	1.40@ 1.70
Kanawha lump.....	Columbus.....	3.30	3.25	3.45	3.25@ 3.65	Kansas lump.....	Kansas City.....	5.50	5.50	5.65	.....
Kanawha mine run.....	Columbus.....	2.00	2.15	2.10	2.00@ 2.25	Kansas mine run.....	Kansas City.....	4.40	4.40	4.40	.....
Kanawha screenings.....	Columbus.....	1.20	1.50	1.50	1.40@ 1.70	Kansas screening.....	Kansas City.....	3.25	3.25	3.25	.....
Hocking lump.....	Columbus.....	3.25	3.15	3.15	3.00@ 3.25	*Gross tons, f.o.b. vessel, Hampton Roads.					
Hocking mine run.....	Columbus.....	2.15	2.15	2.15	2.00@ 2.30	†Advance over previous week shown in heavy type, declines in italics.					
Hocking screenings.....	Columbus.....	1.25	1.50	1.50	1.45@ 1.75						
Pitts. No. 8 lump.....	Cleveland.....	3.25	3.25	3.25	3.00@ 3.50						

### Current Quotations—Spot Prices, Anthracite—Gross Tons, F. O. B. Mines

	Market Quoted	Freight Rates	Aug. 9, 1921		Aug. 16, 1921		Aug. 23, 1921†	
			Independent	Company	Independent	Company	Independent	Company
Broken.....	New York.....	\$2.61		\$7.50@ \$7.75		\$7.50@ \$7.75		\$7.50@ \$7.75
Broken.....	Philadelphia.....	2.66	\$7.50@ \$8.20	7.65@ 7.85	\$7.50@ \$8.20	7.65@ 7.85	\$7.50@ \$8.20	7.65@ 7.85
*Broken.....	Chicago.....	5.62	12.40	12.45	12.40	12.55	12.75	12.65
Egg.....	New York.....	2.61	7.40@ 7.75	7.50@ 7.75	7.30@ 7.75	7.50@ 7.75	7.40@ 7.75	7.50@ 7.75
Egg.....	Philadelphia.....	2.66	7.60@ 8.20	7.65@ 7.85	7.60@ 8.20	7.65@ 7.85	7.60@ 8.20	7.65@ 7.85
*Egg.....	Chicago.....	5.62	12.40	12.45	12.40	12.55	12.80	12.65
Stove.....	New York.....	2.61	7.80@ 8.00	7.80@ 8.10	7.80@ 8.25	7.80@ 8.10	7.80@ 8.35	7.80@ 8.10
Stove.....	Philadelphia.....	2.66	8.00@ 8.35	7.95@ 8.25	8.00@ 8.35	7.95@ 8.25	8.00@ 8.35	7.95@ 8.25
*Stove.....	Chicago.....	5.62	12.70	12.70	12.70	12.80	13.40	12.90
Chestnut.....	New York.....	2.61	7.25@ 7.75	7.80@ 8.10	7.25@ 7.75	7.80@ 8.10	7.35@ 7.80	7.80@ 8.10
Chestnut.....	Philadelphia.....	2.66	7.75@ 8.25	7.95@ 8.25	7.75@ 8.00	7.95@ 8.25	7.75@ 8.00	7.95@ 8.25
*Chestnut.....	Chicago.....	5.62	12.70	12.80	12.75	12.90	13.10	12.90
Pea.....	New York.....	2.47	4.50@ 5.25	6.05@ 6.45	4.50@ 5.25	6.05@ 6.45	4.50@ 5.75	6.05@ 6.45
Pea.....	Philadelphia.....	2.38	4.50@ 5.75	6.10@ 6.20	4.50@ 5.50	6.10@ 6.20	4.50@ 5.50	6.10@ 6.40
*Pea.....	Chicago.....	5.62	11.10	11.20	11.25	11.10	11.25	11.00
Buckwheat No. 1.....	New York.....	2.47	2.50@ 3.00	3.50	2.50@ 3.25	3.50	2.75@ 3.50	3.50
Buckwheat No. 1.....	Philadelphia.....	2.38	2.50@ 3.00	3.50	2.50@ 3.00	3.50	2.50@ 3.00	3.50
Rice.....	New York.....	2.47	1.50@ 2.25	2.50	1.50@ 2.25	2.50	1.75@ 2.50	2.50
Rice.....	Philadelphia.....	2.38	1.75@ 2.00	2.50	1.75@ 2.00	2.50	1.75@ 2.00	2.50
Barley.....	New York.....	2.47	0.75@ 1.25	1.50	0.90@ 1.25	1.50	1.00@ 1.50	1.50
Barley.....	Philadelphia.....	2.38	0.75@ 1.25	1.50	0.75@ 1.25	1.50	0.75@ 1.25	1.50
Birdseye.....	New York.....	2.47		2.50		2.50		2.50

\*Prices and freight rates, net tons; quotations f.o.b. cars, Chicago.

†Advances over previous week shown in heavy type, declines in italics.

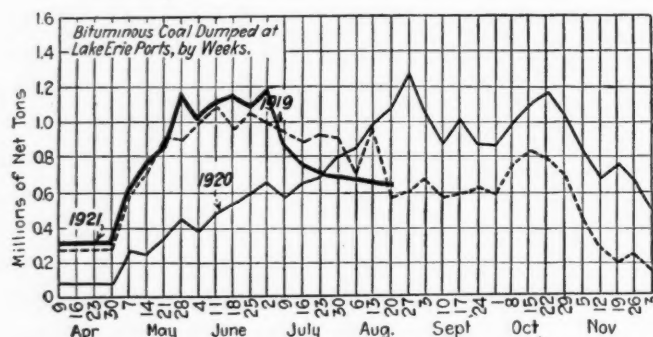


Cumulative receipts of bituminous coal in New England, totaling 8,273,000 tons for the first half year of 1921, compared less favorably with former years. In the first half of 1916, for example, 12,400,000 tons of soft coal were delivered. In 1920, a year when New England consumers had difficulty in obtaining coal, the half-year receipts were 9,428,000 tons. The decrease during the present year is principally if not entirely due to the effect of the business depression in curtailing consumption.

RECEIPTS OF BITUMINOUS COAL IN NEW ENGLAND  
(In net tons)

	By Tide	All Rail	Total
April, 1921.....	603,917	585,797	1,189,714
May, 1921.....	587,684	649,914	1,237,598
June, 1921.....	758,960	799,156	1,558,116
Year to June 30, 1921.....	3,795,425	4,477,712	8,273,137
Year to June 30, 1920.....	4,678,490	4,749,859	9,428,349
Year to June 30, 1919.....	4,077,396	4,163,908	8,241,304

Lake tonnage is still on the toboggan. During the week ended Aug. 20, 634,371 net tons were dumped at the lower ports—611,927 tons cargo and 22,444 tons vessel fuel. Total dumpings for the season to date are 15,424,312 tons, as compared with 9,646,262 tons in 1920.



In regard to destination of the bituminous cargo coal shipped via the Lakes up to the end of July, 1919, is the better standard of comparison of the past two years. Up to July 31 a total of 12,889,000 tons had been forwarded, of which 20.5 per cent had gone to Canadian points and 79.5 per cent to American points, practically the same proportions as obtained in 1919. The total quantity forwarded to American destinations was 10,247,000 tons, almost exactly the same as in 1919. The most significant shift in distribution was an increase in both the tonnage and the relative proportion shipped to Lake Superior points, and

a decrease in the movement to Lake Michigan. The total shipped to American ports on Lake Superior was 6,631,000 tons in 1921, an increase of 561,000 tons over 1919.

The export market is flat. Since the resumption of British mine operations overseas shipments have been dropping steadily. During the week ended Aug. 18 Hampton Roads dumpings for all accounts were 209,823 gross tons, a decline of more than 50,000 tons as compared with the preceding week. Although less coal is being consigned to Tidewater, accumulation at the piers is growing and distress lots of fuel are easily obtainable at low figures.

#### ANTHRACITE

Production of hard coal rose during the second week of August, when, according to the Geological Survey, 1,772,000 net tons were mined. This increase was made possible not so much by reason of any greater demand as through the resumption of work on Aug. 8 at many of the collieries closed by the recent labor disputes in the anthracite region.

Lake shipments of anthracite are still heavy. In the week ended Aug. 17 Buffalo dumpings were 172,900 tons, compared with 199,600 in the preceding week.

June receipts of anthracite coal in New England showed an increase. The total quantity received from Jan. 1 to June 30, according to the Massachusetts Fuel Administration, was 6,294,000 net tons, a million tons ahead of the same period in 1920, and a million and a half ahead of 1919. Judged by experience, therefore, the present position of New England with respect to anthracite appears favorable.

RECEIPTS OF ANTHRACITE COAL IN NEW ENGLAND  
(In net tons)

	By Tide	All-rail	Total
April, 1921.....	305,703	598,897	904,600
May, 1921.....	373,976	666,702	1,040,678
June, 1921.....	386,845	685,600	1,072,445
Year to June 30, 1921.....	2,036,615	4,257,446	6,294,061
Year to June 30, 1920.....	1,622,991	3,579,307	5,202,298
Year to June 30, 1919.....	1,464,596	3,180,092	4,644,688

#### COKE

Beehive coke production slumped off in the week ended Aug. 13. The total output declined to 49,000 net tons from 55,000 tons. Accumulation of by-product coke is menacing the immediate production of beehive.

### Estimates of Production

FROM THE WEEKLY REPORT OF THE GEOLOGICAL SURVEY  
(NET TONS)

#### BITUMINOUS COAL

Total Bituminous, Including Coal Coked

	1921 Calendar Year to Date	1920 Calendar Year to Date
July 30.....	7,319,000	9,371,000
Daily average.....	1,220,000	1,562,000
Aug. 6.....	7,175,000	10,432,000
Daily average.....	1,196,000	1,739,000
Aug. 13.....	7,726,000	11,813,000
Daily average.....	1,288,000	1,969,000

(a) Less 2 days' production during New Year's week to equalize number of days covered for the two years. (b) Revised from last report. (c) Subject to revision.

#### ANTHRACITE

	1921 Calendar Year to Date	1920 Calendar Year to Date
Week Ended:	1921	1920
July 23.....	1,837,000	1,819,000
July 30.....	1,750,000	1,912,000
August 6.....	1,564,000	1,805,000
August 13.....	1,772,000	1,851,000

#### BEEHIVE COKE

	1921 Calendar Year to Date	1920 Calendar Year to Date
Week Ended:	1921	1920
Aug. 13	49,000	55,000
Aug. 6	418,000	3,666,000
Aug. 14	418,000	13,211,000

(a) Subject to revision. (b) Revised from last report. (c) Less two days' production during New Year's week to equalize number of days covered for the last two years.



## Foreign Market And Export News

### Glut of Small Fuels Forces British Pits To Operate on Short-Time Basis

**Production During Week Ended Aug. 6 Receded 968,000  
Tons from Preceding Week—Price Reduction Fails to  
Move Smalls—Export Restrictions Aggravate Conditions**

Many British pits have been compelled to operate on a short-time basis, owing to the rapid accumulation at the pitmouth of unsalable small fuels. Production in the week of Aug. 6, as cabled to *Coal Age* was 3,619,000 gross tons, a decrease of 968,000 from the preceding week and the smallest since the first week after work was resumed.

In spite of the fact that some of these fuels, which were disposed of at 30s. per ton at the beginning of the year, are now offered for 20s. or less, there are no customers, and the market glut is increasing. This rapid accumulation is aggravated by the prevailing restriction in export business. It is likely, in this connection, that the owners will take up with the miners the question of loading at the coal face with riddles and forks. Should this practice be reverted to, the surplus of small fuels would be greatly reduced, and the situation would rapidly become normal again.

The output of coal in Great Britain for the week ended July 30, shows an increase over the preceding week of 253,100 tons, and over the corresponding week of last year of 22,100 tons. Production in the larger districts showed consistent gains over the preceding weeks. The Durham output increased to 625,500 tons; Yorkshire, 809,600; Derby, Nottingham and Leicester, to 631,600; South Wales and Monmouth, 843,000, and Scotland, 519,400.

In spite of the fact that there are fewer pits working than before the strike, the British output continues to rise. Production for the week ended

July 23 is comparable with the corresponding week in 1920.

#### WEEKLY BRITISH PRODUCTION, IN GROSS TONS

District	March 26, Tons	July 16, Tons	July 23, Tons
Northumberland.....	162,000	241,600	232,500
Stafford, Shropshire, Warwick and Wor- cester.....	311,100	333,100	362,600
Lancashire, Cheshire and N. Wales.....	336,000	416,300	427,800
Durham.....	477,500	523,700	571,400
Derby, Nottingham and Leicester.....	482,980	520,500	585,600
S. Wales and Mon- mouth.....	584,200	633,000	781,700
Yorkshire.....	610,300	744,600	794,600
Other English districts	78,800	82,100	96,100
Scotland.....	617,200	432,600	479,500
	3,660,000	3,927,500	4,331,800

The British ironmakers and coke producers have been conferring in an endeavor to fix a price for coke which would be satisfactory to all concerned. Up to now no agreement has been reached, the ironmakers stating that blast furnaces cannot possibly resume work until the price of coke is in the neighborhood of 20s. Coke producers see no immediate possibility of attaining this figure, especially since the prices of residuals have fallen so considerably since March.

British prices, as cabled to *Coal Age*, show a continued decline, with the exception of Best Steam Smalls, Cardiff, which stood firm:

#### CURRENT QUOTATIONS, BRITISH COALS, F.O.B. PORT, GROSS TONS

Cardiff	Aug. 13	Aug. 20
Admiralty Large.....	38s.	36s. @ 37s. 6d.
Steam, Smalls.....	19s. 6d.	19s. @ 20s.
Newcastle:		
Best Steams.....	32s. 6d.	27s. 6d. @ 32s. 6d.
Best Gas.....	36s. 3d.	31s. @ 32s. 6d.
Best Bunkers.....	30s.	32s. 6d.

### Bunker Business Improves at Hampton Roads; Exports Barely Perceptible

Dumpings continue to decline, reflecting the stagnant export market. During the week ended Aug. 18, 209,823 gross tons were dumped over the piers, compared with 261,637 tons in the preceding week.

#### PIER SITUATION

	Week Ended — Aug. 11, 1921	Aug. 18, 1921
N. & W. Piers, Lamberts Point:		
Cars on hand.....	2,100	2,641
Tons on hand.....	103,655	134,502
Tons dumped.....	128,912	102,738
Tonnage waiting.....	3,600	7,300
Virginian Ry. Piers, Sewalls Point:		
Cars on hand.....	2,080	1,961
Tons on hand.....	104,000	90,400
Tons dumped.....	80,812	70,094
Tonnage waiting.....	4,650	6,857
C. & O. Piers, Newport News:		
Cars on hand.....	1,889	1,961
Tons on hand.....	94,450	98,050
Tons dumped.....	51,913	36,991
Tonnage waiting.....	7,980	6,550

There has recently been some little increase in the demand for bunkers, but with the market depressed as it is by the absence of any appreciable export coal demand, the betterment in the bunker business trade passes almost unnoticed. Shipments to New England in August are expected to be larger than in July, as this is constituting the bulk of the traffic from Hampton Roads.

Hardly any c.i.f. business is in sight at all at the present time. But even then, there is no idea anywhere in local circles but that there must very shortly come a time when foreign countries will have to take at least certain tonnages from America.

A shipper familiar with the situation gave it as his view that the American exporter will stand the best chance with Mediterranean countries and the West Coast of South America. The expense of putting British coal in Mediterranean countries is such that the United States stands a better chance of getting business there. British capital is so greatly interested in the development of Argentina that American exporters can get only a fraction of that business. Another factor in favor of the British exporter shipping coal to the Argentine is the low freight rate due to the return movement of grain. The same handicap does not apply to the West Coast of South America, where firms in this country are thought to stand even a better chance in building up a substantial business.

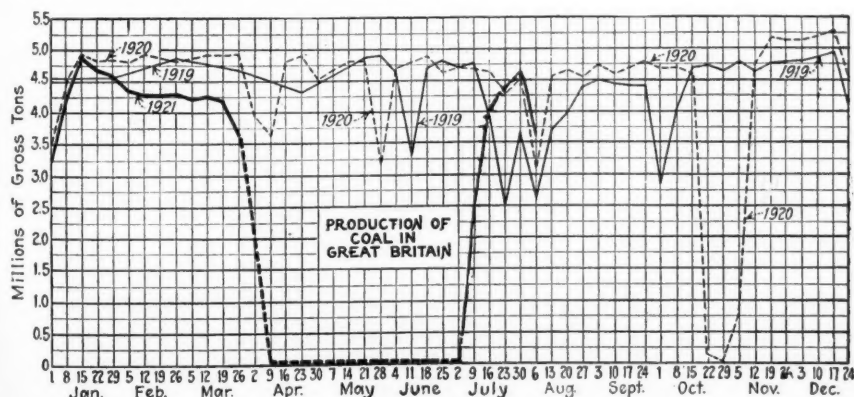
### Export Clearances, Week Ended Aug. 18

#### FROM BALTIMORE

	Tons
For France:	
Span. SS. Consuelo.....	5,402
For Sweden:	
Sw. SS. Astur.....	4,045

#### FROM HAMPTON ROADS

For Brazil:	
Br. SS. Ovid, for Buenos Aires.....	4,572
For Canal Zone:	
Am. SS. Cristobal, for Cristobal.....	9,611
For Cuba:	
Am. Schr. Augusta M. Snow.....	997
Br. SS. Berwindvale, for Havana.....	7,964
Br. SS. Membassa, for Havana.....	4,376
For Africa:	
Br. SS. Nile, for Alexandria (Egypt).....	7,167
Br. SS. Boutry, for Lagos.....	2,035



### French Railways Buy Welsh Coal— Complaints on German Coals

According to a cable to *Coal Age* from Paris, Aug. 19, the French State Railways have contracted for 20,000 tons of Welsh steam coal at approximately 30s. per ton. It is believed that this will not meet the full requirements of the railways.

Satisfactory progress is being made in the rehabilitation of the war-damaged coal mines in the Nord and Pas de Calais. Twelve companies in these fields that in the first six months of 1920 produced but 750,000 metric tons, raised 3,263,000 tons the first six months of this year, having produced 449,000 tons in June. Mines to the west of Pas de Calais, not damaged in the war, had an output of 698,000 tons in June compared with 617,000 tons in May. The total production of these two districts, January to June inclusive, this year, has been 7,344,000 tons, compared to which was an output of 3,810,000 tons the same period of 1920 and 14,946,000 tons the first half of 1913.

There is hardly any inquiry for coal in France now on account of the industrial slackness, the heat and the holidays. Prices are little changed so far, but there is no doubt that with the poor demand added to competition from abroad, prices are bound to come down. It is expected that as soon as British exporters really enter the market again, the French mines will have to cut their prices by at least 10 francs per ton.

The labor situation is very satisfactory and while it is still difficult to enforce wage reductions in the Northern districts on account of the high cost of living there, in the Central and Southern areas this has been done without any difficulty.

There are still complaints about the irregularity and insufficiency of supplies of German coals, and more attention is also given to quality which, although improved of late, is not yet satisfactory when one compares the coals shipped to France with the well-prepared and clean fuel supplied to German industry.

### Pier and Bunker Prices, Gross Tons

(Foreign Bunker Quotations by Cable to *Coal Age*)

	PIERS	
	Aug. 13	Aug. 20
Pool 9, New York...	\$5.70@5.95	\$5.75@5.90
Pool 10, New York...	5.35@5.75	5.25@5.60
Pool 71, New York...	5.90@6.00	
Pool 9, Philadelphia...	5.80@6.00	5.80@6.00
Pool 10, Philadelphia...	5.40@5.70	5.40@5.70
Pool 71, Philadelphia...	6.00@6.35	6.00@6.25
Pool 1, Hampton Roads...	5.50	5.50
Pools 5-6-7, Hampton Roads...	5.00	5.00
	BUNKERS	
	Aug. 13	Aug. 20
Pool 9, New York...	\$6.00@6.25	\$6.00@6.20
Pool 10, New York...	5.70@5.90	5.60@5.85
Pool 9, Philadelphia...	6.10@6.30	6.10@6.30
Pool 10, Philadelphia...	5.70@6.00	5.70@6.00
Welsh, Gibraltar...	60s. f.o.b.	60s. f.o.b.
Welsh, Port Said...	80s. f.o.b.	80s. f.o.b.
Welsh, Singapore...	102s. 6d. f.o.b.	102s. 6d. f.o.b.
Welsh, Rio Janeiro...	90s. f.o.b.	90s. f.o.b.
Welsh, Algiers...	60s. f.o.b.	60s. f.o.b.
Welsh, Malta...	75s. f.o.b.	67s. 6d. f.o.b.
Welsh, Lisbon...	85s. f.o.b.	85s. f.o.b.
Welsh, La Plata...	80s. f.o.b.	80s. f.o.b.
Welsh, Madeira...	65s. f.a.s.	65s. f.a.s.
Welsh, Tenerife...	65s. f.a.s.	65s. f.a.s.
Welsh, Genoa...	69s. t.i.b.	69s. t.i.b.
Durham, Newcastle...	35s. @37s.	35s. @37s.
Belgian, Antwerp...		135 fr.

### Ruhr Production Declines

A cable report to *Coal Age* on Aug. 19 shows the output of coal in the Ruhr region for the week ended Aug. 6, as 1,736,182 metric tons, as compared with 1,761,000 for the last week in July.

### American Coals Weaker in Holland and Italy

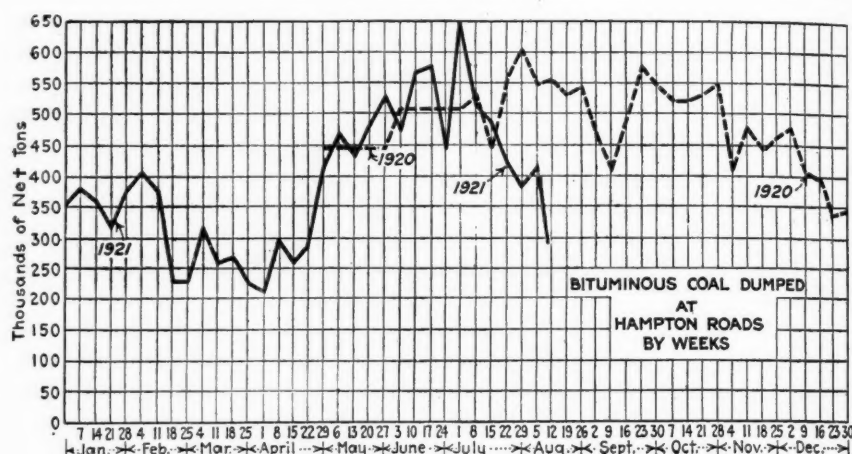
Cable quotations to *Coal Age* on Aug. 19, show that American coal is weaker on the Continent. Genoa reports American steam at 250@260 lire, on wagons, compared with 315@320 lire on Aug. 1. British supplies of Cardiff

steam first are available at 270@280 lire, on wagons.

Rotterdam quotations show a decline on British steam coals to 37s. from 39s. on Aug. 12. American gas coal is firm at \$7 f.a.s.

### C. I. F. Prices, American Coal (In Gross Tons)

	Aug. 13		Aug. 20	
	Low Vol.	High Vol.	Low Vol.	High Vol.
River Plate...	\$9.70	\$9.10	\$9.50	\$9.00
French Atlantic...				
United Kingdom...				
West Italy...	10.00	9.50	10.00	9.50
Scandinavia...				
Port Said...				
Piraeus...	10.90	10.30		



## Reports From the Market Centers

### New England

#### BOSTON

*Dull Market Continues—New Low Levels in Central Pennsylvania—Hampton Roads Shippers Active—Slightly Better Request for Anthracite.*

**Bituminous**—There is no apparent let-up in the depression that affects the coal trade. All the shippers regularly represented in this market are strongly reinforced by salesmen from nearly all the producing areas east of the Mississippi Valley and the result is an utter lack of confidence among most buyers in the stability of any of the prices named. Each week sees more pressure to move coal, and many of the novices in this territory have not yet grasped the fact that within a widening zone of tidewater, the Hampton Roads coals are not to be denied.

Fair grades from central Pennsylvania are now being quoted at less than \$2, with certain orphans like high-volatile slack selling down to \$1.50. The railroads have shut off shipments on many contracts and at the same time are casting wistful eyes toward the lowest of the low prices so freely offering.

It is a situation almost bewildering in its dullness.

Sailing vessels are easily had now at \$1, Hampton Roads to Boston or Portland, and this only makes more emphatic the return of the smokeless coals to a territory where once they dominated. Not since 1914 have we had freights at \$1 from Norfolk or Newport News, and so far as supply and demand are concerned there is no reason beyond the will of the vessel owners themselves why they should not go lower.

The loading terminals continue with about the same heavy surplus of coal on hand, as compared with vessels waiting and there are continual embargoes against certain shippers. The tonnage cleared for New England is now in excess of that for bunker purposes, and several of the smaller agencies who have hitherto been able to confine their business to offshore are also turning their attention to New England.

A mild sensation has been created by the expedient resorted to by one of the transatlantic lines in order to get cheaper coal than could be furnished in Boston. The liner "Winifredian" was sent to Hampton Roads from Boston for 2,700 tons of bunker coal, only to return to Boston to load general cargo for



Liverpool. Eight days were consumed in the process, although much publicity has been given the statement that the owners saved \$3 per ton.

**Anthracite**—The proximity of another monthly advance has caused a mild renewal of interest in domestic shipments. This, however, seems to be true only of the larger retailers; the smaller distributors are now so well stocked for the most part that they are inclined first to turn some of their coal into money before purchasing more.

## Tidewater—East

### NEW YORK

*Anthracite Steam Develops Strength—Turning Point for Bituminous Believed Near—Local Dumpings Increase.*

**Anthracite**—Conditions show improvement. Demand is somewhat stronger, owing to the cut in production. Stove coal leads in the call and aids in the movement of egg and chestnut. Both dealers and consumers are showing more interest, which seems to be the vanguard of an active fall.

The efforts of the operators to put before the public "everything about the anthracite industry that the public as consumers of coal, want to know, and ought to know," is already being noticed by those who use anthracite. It is also expected that the retail dealers will soon begin a campaign urging consumers to lay in their coal for the winter.

The trade believes that better days are close by. With many mines closed and the West and New England taking their share of the output, demand is making big inroads on the tonnage produced.

Some of the better grades of independent stove were quoted as high as \$8.50, but these instances are said to have been few, the average quotation being from 15c. to 20c. lower. Egg and chestnut were from 10c. to 45c. below company's circular.

Pea continues to move slowly, but quotations ranged \$4.50@5.75.

The feature of the trade was the strength shown in the smaller coals. While there has been little change in the situation regarding buckwheat No. 1, rice and barley developed strength and the better grades were hard to obtain.

**Bituminous**—There is a better feeling in the market, although the order books fail to show any greater activity. However, the trade believes that by the middle of September the turn for the better will have taken place and orders will begin to come in. On the other hand, a canvass made of more than a score of large consumers showed that most of them had contracted for their year's coal; some would not be in the market until the middle of September; others had several months' coal on hand, while some said they were using electricity or fuel oil instead of coal.

Pier statistics show that from Aug. 1

to 18, there were dumped over the local docks 876 cars of pool coal and 6,743 cars outside the pool, as compared with 361 cars of pool coal and 4,600 cars of coal outside the pool dumped from July 1 to 18. On Aug. 19, there were 144 cars in the pools and 1,313 cars outside the pools at the local piers, as compared with 328 cars in the pool and 1,581 cars outside the pools on Aug. 12.

Operators contend the outlook depends much upon the labor situation. This is particularly true in the central Pennsylvania fields where the mine workers will not consider a wage reduction. Many mines producing the lower grades are idle and therefore there is comparatively small tonnages of these coals available.

Gas slack continues strong, quotations ranging \$1.75@1.90. Quotations for coal at the local piers show comparatively small change from last week.

### PHILADELPHIA

*Retail Anthracite Improves—Bottom Believed Passed—Tax Question Temporarily Disposed Of—Bituminous Inactive—Prices Unchanged.*

**Anthracite**—Better conditions are indicated from the retail standpoint. While some attribute this to the belief that the buyer is convinced coal will not be cheaper, others think it indicates an early start of the usual seasonal buying.

Retailers are also ordering from the shippers somewhat more actively, and a good deal of this is traceable to the expected increase in mine prices on Sept. 1, as it is felt that all companies will then make their final price announcements for the winter season.

It would seem that any increase in prices due to the coal tax is at least disposed of until Jan. 1. The companies have not officially announced this, but the news has gone broadcast that they expect final court decisions by that time, and should it be favorable to the state the tax will be imposed by the operators on that date, although they will not levy any retroactive impost.

There is a tendency to a more uniform price schedule among the dealers and at this time some of the so-called cut-price men are asking \$13.75 for egg, \$14 for stove and nut, and \$11 for pea coal, which is only from 25c.@50c. less than some of the larger and more conservative dealers.

Steam coals are still unduly quiet, although the independents have been somewhat less hampered with their surplus, as with curtailed working time they have less to sell. Buckwheat is the only size being moved, but the companies still insist on \$3.50 for this, although the independents will still take offers of 50c.@75c. less.

**Bituminous**—Nothing happens in soft coal, but if it is true that a calm always presages a storm, there is bound to be a real disturbance soon. Surely, the producers never tried harder to get the big consumers to take in coal, yet outside of the utility plants, they seem to accomplish little.

The talk about lowered contract prices persists and there are indications of some good coals being closed \$2.50@ \$2.90, yet most producers are holding to the policy of keeping a big tonnage for the market when the real buying starts.

Probably the only scarce coal at this time is slack, as there are certain industries here who use heavy heavy tonnages, who have lately added to their working time. Quotations for gas slack are around \$1.50, and not especially free at that figure.

There is no change in Tide business, the activity being confined mostly to bunkers, although a few fair-sized cargoes have departed this week for overseas.

### BUFFALO

*Bituminous Slightly More Active—No Real Stir Looked for—Anthracite Buying Slow—Lake Shipments Heavy.*

**Bituminous**—Many local shippers see a slight improvement. All that the present situation seems to teach is that when business pays well the thing to do is to make the most of it. This applies especially to the shipper who was accused of being a profiteer last fall. Meanwhile, those who tried to hold prices down when they went soaring are wondering if they did the right thing.

One of the reasons for the slow movement is the failure of Canada to buy. That country is trying hard to put out enough coal of its own to meet the entire demand and as it ordinarily produces about half of its consumption it is now able to meet that much more nearly than it has in a long time. The factories are quite as inactive as ours and they do not show any disposition to start up, so it will have to be inferred that the same cause that keeps them shut here is in operation there.

Prices do not change. Quotations are \$3 for Youghiogheny gas lump, \$2.75 for Pittsburgh and No. 8 lump, \$2.50 for Allegheny Valley mine run and \$1.85@2 for slack.

**Anthracite**—"Coal is too high!" That is about all the non-coal man will say in regard to the anthracite trade. It happens that hard coal is not only much higher than it used to be, but it refuses to come down, as a good many other things are doing. The worst of it is that it is not likely to come down right away.

At the same time, independent mines, which go into the open market and sell for what they can get, are about half idle, because they cannot run at a profit. A Buffalo jobber, who has contracts to sell this coal states that only one or two of the big independents are running at even half capacity and one of them is at present stocking coal.

There is a little improvement in the demand and it is expected to keep up from this time on. The fall clouds are here and coal must be had anyhow.

**Lakes**—Heavy shipments continue. The amount for the week ended Aug. 17 was 172,900 net tons, of which 93,100

tons cleared for Duluth and Superior, 36,900 for Milwaukee, 15,500 for Chicago, 12,400 for Fort William, 7,500 for Manitowoc, 4,500 for Green Bay and 3,000 for Hancock. Freight rates remain quiet, 65@70c. to Chicago, 60c. to Milwaukee, 55c. to Manitowoc and Green Bay, 65c. to Hancock and 50c. to Duluth and Fort William.

**Coke**—Furnaces do not need much and are not willing to stock up on the present outlook. This holding back is also shown by the failure of the iron-ore movement by Lake to pick up. Prices remain at \$4 for 72-hr. Connells-ville foundry, \$3 for 48-hr. furnace and \$2.75 for stock, adding \$3.64 to cover freight.

### BALTIMORE

*Brighter Tone to Market—Better Line of Inquiry and More Closings—Prices Inclined to Stiffen—Hard Coal Men Also Getting More Orders.*

**Bituminous**—A brighter tone is noted in the soft coal market. A trip around the trade brought out the fact that the majority of offices are reporting not only a better line of inquiry, but more closings on both spot and contract than have been noted for some weeks past. Prices, too, while still abnormally low, are showing an inclination to stiffen.

This is particularly true of best grade steam coals and some of the more exclusive lines of 3-in. Pennsylvania production. The trade is now quite hopeful that the month of September will see a sharp betterment in all matters relating to soft coal handling. The export situation shows the following results for the week ended Aug. 19: cargo loading, 9,447 tons; bunkers, 1,100 tons.

**Anthracite**—Whether purchasers are beginning to realize that they cannot expect to get fuel lower than existing rates, or whether, due to the natural inclination to buy as the colder weather approaches, the fact remains that there is now a somewhat better line of ordering reported. Some of the dealers are finding, without any rush, however, that they have enough of immediate orders on hand to make a fair delivery.

This does not mean that the trade is not far back in its seasonal delivery as a result of the mis-education of the public through the prosecution of the coal dealers, and the constant statements in the daily press that prices would be driven downward if action was taken against the Retail Coal Exchange.

## Northwest

### MILWAUKEE

*Demand Slowly Improving—Coal and Coke Stocks Piling Up—Anthracite in for Another Raise—Lake Receipts Falling.*

Demand is slowly improving. Persistent solicitation and guaranteeing of price is slowly wearing down the idea

that coal is going to be cheaper. There may be an increase on anthracite of 10c. per ton Sept. 1, with possibly the addition of the amount of the Pennsylvania tax, which is put at about 25c. or 30c. Some dealers hold that it would not be advisable to add anything like that amount to the present prices under the prevailing public sentiment.

The anthracite situation is causing some apprehension because the slow demand thus far has kept the docks filled and there is no room to store necessary additional receipts before navigation closes. It is estimated that less than 50 per cent of Milwaukee's anthracite consumers have laid in their supplies.

A state agency is making an investigation of coal prices, but Gov. Blaine declines to divulge the department through which it is being conducted. Gov. Blaine, who is invited to a conference of governors in regard to coal conditions, is of the opinion that any undue charges on coal are the result of influences outside of the state.

The City of Milwaukee is preparing to market coal at cost to small consumers during the coming winter, by establishing yards in every ward.

Receipts by Lake for the first half of August are 71,921 tons of anthracite, and 156,891 tons of soft coal, making a total of 597,336 tons of the former and 1,625,859 tons of the latter. Last year the receipts to this time were 442,217 and 813,309 tons, respectively.

### DULUTH

*Bituminous Stocks Adequate, with Reduced Industrial Consumption—Anthracite Receipts Increase—Dock Business More Active.*

Sufficient bituminous coal has arrived to take care of the winter's needs, according to an estimate made by dock men here. This means that the feared shortage of soft coal has passed and that a reduced estimate of necessary consumption has shown that the coal now on the docks will take care of the wants of that portion of the Northwest which draws from this center.

A noticeable slackening in soft coal shipments has become evident and at the same time a picking up in anthracite receipts has been recorded. Last week thirty-four cargoes arrived at the harbor, of which twelve were anthracite and twenty cargoes are reported on the way, of which six are hard coal.

Approximately 600,000 tons of hard coal are needed to fulfill the requirements as estimated. This amount should come into the docks, provided that ore shipments do not take an unexpected sag, and cause many boats to be laid up. Vessels are arriving in the harbor daily, without cargoes, because of the shortage of shipments of soft coal.

Shipments off the docks are gaining daily. August bids fair to pass the mark set in July and the trade looks for a spurt of business in September. The dealers are carrying some of the

burden and the whole weight of maintaining huge stocks of coal will not fall upon the dock men. The consumer is not purchasing to any marked extent as yet.

Prices remain much the same, with a tendency toward growing firmer. Youghiogheny and Hocking steam lump are at \$7, with gas \$7.25. Screenings are firmer at \$4 and run of pile remains the same.

### MINNEAPOLIS

*Industrial Consumption Low—Dock Supplies May Be Ample—Retail Demand is Stronger—All-Rail Tonnage a Big Factor.*

The coal trade is watching prospects and conditions with some apprehension. There is reasonable ground for anticipating almost anything. On the one hand there is a better supply on the docks than for several years. On the other, the tonnage moved forward this year is not equal to any season's consumption.

However, the fear of a severe shortage early in the season is pretty well past. It is clear that with 6,000,000 tons of soft coal moved so far this season, there is a reasonable working basis for a fair start into the winter. The steel corporation's tonnage shows a decrease of 25 per cent, undoubtedly because its requirements will be that much reduced, if not more. This means that with soft coal tonnage more than three times what it was a year ago, there is some excess beyond the comparison of commercial coal.

But it is still a question as to whether industrials will need as much as usual. Industry is still in a state of inaction. The chances are that there will not be any sudden increase in the demands from manufacturers, but instead a gradual change. If such shall prove to be the case, the needs of the Northwest will have a reasonable supply in the tonnage now on the docks, plus whatever may still be received.

Another phase of the situation which does not receive the consideration which it should, in reviewing the needs of the Northwest, is the all-rail supply. This trade has been an energetic factor in seeking business, and has served a good portion of the more southern and central areas of the Northwest with a large tonnage. There is no reason to suppose that this will be entirely cut off.

A somewhat encouraging fact is the steady increase of retail orders. There is no doubt that consumers have held out on their strike just as long as they felt that they could. But they are reluctantly coming to the conclusion that they must buy some coal at least, at the current prices. Deliveries are increasing steadily in the Twin Cities.

One thing which has served to hold back business right along, still continues. The latest is the report that President Harding favors a reduction in the freight charges on coal to the Northwest. This recommendation should have been made three or four months



ago, when, if successful, it would have given an opportunity to move coal at the most opportune time. What the Northwest needs now is a stable situation, so people will buy coal and have it moved in an orderly manner, rather than have them thrown into an expectancy of cheaper prices by delaying, with a probability of congesting shipments with the first touch of cold weather.

## Inland West

### CHICAGO

*Buyers Deaf to Warnings of Impending Shortage—Domestic Trade Gets Under Way—Outlook Uncertain.*

No less than three of the newspapers circulating in and about Chicago have gone to the trouble of writing special articles warning the public relative to an impending coal shortage, but, as usual, the public looks upon these articles as "propaganda from the coal trust," which the newspapers are glad to publish for a price.

The market on steam coal, especially screenings, had a very bad setback early last week. One of the largest producing companies operating mines in Illinois and Indiana, had a majority of its larger contracts expire. The result was cut prices to the trade and a condition more disorganized and illogical than any we have seen in the coal market this year.

Some little coal is moving to the retailers. This is because the vacation season is nearly over and people returning from their trips through force of habit realize that the end of the summer is approaching and winter will soon be here. Consequently, purchases of domestic coal have been stimulated to some mild extent.

It is almost impossible to get a forecast from any producer or wholesaler. The better informed operators are the ones from whom it is hardest to get a prediction. They claim they have been fooled by the market so often they have given up making predictions and are awaiting developments with what patience they have. It is also worthy of note, that the percentage of pessimists has increased, and the number of optimists decreased. As we have been fooled so often, it may be now that the general tone is pessimistic, better days and better times may be nearer to us than we perhaps realize.

### CLEVELAND

*Retail Trade Expanding—Industrial Outlook Better—Lake Dumpings Decrease—R. R. Buying Stimulated.*

**Bituminous**—The gradual enlargement of industrial activities which has been going on in this district for the last few weeks is beginning to be reflected in a somewhat improved demand for industrial fuel. There has been no widespread gains, but sentiment among

manufacturers is distinctly more cheerful and the coal trade believes that the next few weeks should bring the start of an upturn in buying based upon autumn trade activities.

The steel industry continues to register gains and the spurt there has shown no signs of abatement.

Prices of the various grades have shown no change in the last week. The demand for slack continues strong. Considerable improvement has appeared in the domestic situation, with householders coming into the market in increasing numbers. Most consumers apparently have given up the hope held early in the summer, that prices at retail would drop. Mayor Fitzgerald, who is a candidate for re-election, has announced that a city coal yard will be established at which fuel will be sold at around \$1 a ton cheaper than dealers.

Bituminous coal receipts during the week ended Aug. 13, show increases both for industries and retailers, the total being 732 cars divided; industrial 518, retail 214; as compared with 557 cars the preceding week.

**Lake**—Loadings at the lower ports are declining steadily, the decrease last week having been nearly 40,000 tons.

### ST. LOUIS

*Slight Improvement Noted in Country Demand—Domestic Orders Picking Up—Fall Rush Indicated.*

There has been some little improvement in the number of domestic orders coming in. This, however, is for the middle-grade coal. Anthracite and smokeless seem to have very little call, while coke shows up better. The former users of Carterville are now going to Mt. Olive and the present consumers are those who used coke, smokeless and anthracite. The result is that Mt. Olive is beginning to move fairly well and Standard is also showing a little activity.

Steam business locally shows a little improvement here and there. Country business is picking up unusually well on domestic, especially in the western section of the state. Some business is also noted in the northern part. Country steam business is slow and the tonnage is falling considerably under that of a year ago. There is no change locally in prices.

### DETROIT

*Increase in Inquiries—Sales Remain of Small Volume—Anthracite Buying Slightly Better.*

**Bituminous**—With coal available in liberal supply, consumers fail to manifest an active degree of buying interest. While incoming shipments are not large, they include a good proportion of the various sizes of steam and domestic coal.

Some of the jobbers and wholesalers say they are receiving a larger number of inquiries. There is not, however, a proportionate expansion of buying and the theory is advanced that some of those making inquiries are in search of support for controversial negotia-

tions aiming at forcing concessions from other dealers.

Three-inch lump from Ohio is offered at \$3.25; 2-in. lump, \$3; egg, \$2.75; mine run, \$2.15, and nut and slack \$1.50. Four-inch West Virginia lump is \$3.25; 2-in. \$3; egg, \$2.75; mine run, \$2.25, and nut and slack, \$1.65. Kentucky coal is obtainable at about the same prices as West Virginia. Smokeless lump and egg is \$5.25; mine run, \$3 and nut and slack, \$1.50@2.

**Anthracite**—Low temperatures have imparted a slight stimulus to buying of household sizes. Retail dealers are endeavoring to encourage action by urging the public to put in at least one ton to make sure of having fuel to start the winter. Distribution is far behind previous years.

### CINCINNATI

*Some Market Activity—Smokeless Prices Decline—Domestic Demand Strengthens—Steam Inquiries Increase.*

Greater activity has been shown in the past three or four days than for many months previous. Country buying has been better, with some inquiries being made for contracts. Further shutdown of Kentucky mines, with many in Kanawha and Logan, has had its effect in strengthening the steam sizes and likewise edging the price a little higher.

Smokeless coals have shown signs of reductions. Lump was being jobbed about at extreme figures of \$4.50@ \$4.75 while egg from the same source was offered \$4@4.25. Larger corporations still hold to the \$5.50 quotations but admit they are selling around \$5 for lump. Mine run can be had around \$2.75 while both Pocahontas and New River steam coal can be had \$1.75@ \$2.25, with some Dry Fork going as low as \$1.50.

Bituminous prices have been up one day and down the next. Some high-grade West Virginia gas slack sold up to \$1.75 and low grade Kentucky splints commanded \$1.10. Mine run from both sections is selling \$1.75@2.25. West Virginia lump is \$2.75@3 on the spot market and up to \$3.50 on contract. Because of the betterment in demand, Kentucky operators have gone back to their quoted price of \$3.50 for lump and block.

Retail prices show no change with the exception of slack, which had been quoted as low as \$4.35 in some quarters. Dealers are now asking \$4.50 a ton.

### COLUMBUS

*Stronger Demand for Domestic—Steam Sizes Are Weak With the Exception of Screenings—Production Shows Little Change.*

Domestic trade is now attracting the bulk of the attention of producers, as that is about the only hopeful sign on the horizon. Steam business is slow and Lake trade is gradually tapering off. Retailers are buying to a limited extent as they are compelled to replenish supplies. Householders are coming in better, although quite a number are

still holding off in the belief that prices may be lower.

Retail prices are fairly steady at former levels. Hocking lump retails at \$6.50, while re-screened varieties are quoted at \$6.75. Splints sell at \$7.50 and White Ash at \$7.75. Pocahontas is fairly active around \$9.50. Anthracite is quoted at \$15 and coke at \$11.50 for all sizes.

During the week ended Aug. 13, the H. V. docks at Toledo loaded 159,167 tons, as compared with 124,501 tons the previous week, making a total of 2,692,960 tons for the season. This is far ahead of the shipments last year, when 1,340,292 tons were loaded up to Aug. 14. During the same week the T. & O. C. docks loaded 34,677 tons, as compared with 15,144 tons the previous week, making a total of 691,721 tons for the season.

It will require a considerable awakening of industrial activity before the steam business will be affected to any great degree. Railroads are not taking much tonnage. Steam plants which are in operation generally have adequate reserves or are buying from hand to mouth. Public utilities are the best customers at this time.

## West

### DENVER

*Lignite Price Advances — Bituminous Quiet—Production at Low Ebb.*

The price of lignite is advancing. The latest increase was 50c., effective Aug. 10, making the retail price \$9.25 for the best grade. A newspaper with a leased coal mine as a side venture is selling a somewhat inferior grade for \$6.35 a ton.

Bituminous markets are quiet. For the week ended July 30, a total of 160,708 tons were mined of a possible full-time output of 290,714 tons, 60,000 tons less than a year ago.

The *News*, published in Denver, makes the following editorial comment: "Relief to the consumer can only come through change of basic conditions—wages and freight. The railroads can do little for us as long as they are hampered in control of their property. As to the miners, it appears obvious that a noble per diem may approximate starvation per annum. It is futile to maintain a scale that brings home no bacon through the year."

## South

### BIRMINGHAM

*Better Line of Steam Inquiry—Domestic Unusually Quiet—Quotations Practically Unchanged.*

The only encouraging feature seen in the trade the past week or so is an increase in inquiry for the steam grades and the hope that such feelers will result in the placing of some new business shortly. Consumers are continu-

ing the policy of buying for immediate needs in the spot market and much of this coal is picked up here and there where it is under load and must be disposed of. Regular quotations are materially shaded to move it. The tonnage moving shows little, if any, increase over the record for previous weeks.

Improvement in the domestic demand depends for the most part on a reaction in the retail line, where business is now extremely quiet. Yards are stocked heavily and are not taking deliveries from the mines in accordance with contract stipulations and little new business is being taken on. Current quotations are shown in the Weekly Review.

### LOUISVILLE

*More Interest in Fall Tonnage—Screenings Weaker—Some Contracting Being Done.*

Prices this week show little change, although screenings are a trifle weaker, as a result of industrial consumers

playing for a weaker stocking market in September and October, when demand for prepared sizes results in larger production of screenings. However, the reverse may prove the case if car supply runs low, or if movement of lump is not as heavy as anticipated.

All hands figure that there will be an active demand in the next two months. Retailers are buying a little coal, and there is some movement through jobbers, and to public utilities. The cotton mills may start buying before long. Some of the iron companies, and the cement, brick and gas companies are buying better. A few fair contracts have been signed up in the past few days, but most of the trading is confined to small lots.

Inquiries as a whole are much better, and the general situation is looking more promising, although actual operations are about the same as they have been. Current prices are shown in the Weekly Review. Lump is very firm, mine run is steady, and screenings have only lost a few points.

## News From the Coal Fields

### Northern Appalachian

#### ANTHRACITE

*Strikes Settled—Heavier Production—Demand Still Weak.*

During the past week practically all of the strikes have been settled and the large companies have resumed full time so that this week will show increased production. On Monday, Aug. 15, there was a religious holiday which to some extent affected the production at some of the mines. The independent companies are not as yet any better off than they have been for some time.

#### PITTSBURGH

*Distinct Increase in Inquiry, but Little in Consumption — Production Very Light.*

While there is little, if any, increase in transactions, there is a noticeable increase in interest on the part of consumers, who are sounding out producers as to terms on which they can secure protection for future deliveries. Apparently consumers, while having no greater need of coal, expect their business to improve in the near future. Some of this inquiry comes from by-product coking interests. On account of price differences, the Connellsville region is more likely to get business, as prices made on the basis of production cost are above what can be done in non-union fields like Connellsville.

Mine operations are almost entirely confined to production of Lake and gas coal. Lake coal has been decreasing almost continuously since about July 1, and is now rather light, but gas coal

production has been holding its own very well.

While reports from the steel industry are somewhat more favorable, there is very little increase in the actual operation of steel mills and the industry is still consuming but little coal. Prices are largely nominal.

#### CENTRAL PENNSYLVANIA

*Optimism Felt Despite Labor Controversy—Demand Increases.*

In spite of the controversy which is on between the Central Pennsylvania Coal Producers' Association and the Central Coal Association with the United Mine Workers of District No. 2, a spirit of optimism pervades part of the field and northern Cambria County operators report an increase in production with additional forces at work.

The Rich Hill mines at Hastings are operating full capacity while the Navy Smokeless mines at Logan are running full with a daily output of 700 tons. At Bakerton, there is a noticeable increase in the demand and the outlook for business is better now than for some time.

#### CONNELLSVILLE

*Byproduct Coke Hampers Immediate Production of Connellsville Coke—Fair Business Done in Coal.*

Not a few steel interests as well as byproduct coking plants are taking a larger proportion of their coal from the Connellsville region and a smaller amount from the Pittsburgh district, the change being due, of course, to the difference in production cost.

Coke operators believe they have not



felt the full effects of byproduct coke competition as yet, it being known that stocks of byproduct coke have accumulated. The Geological Survey report of coke production in July shows, for the country at large, seven tons of byproduct coke made to one of beehive, and as some of the byproduct has accumulated the competition will be felt as demand for coke increases.

The region, however, has had a better demand for coal than would otherwise have been the case, and in the past few days there has been an increase in inquiry from byproduct interests, who seem to wish to secure protection for the future on coal, instead of buying from hand to mouth. Best grades of Connellsville byproduct coal command \$2 for mine run, without any difficulty, although there is much coal of one sort or another than can be had for less, even for less than \$1.75.

Spot demand remains as formerly, there being a run of small orders for furnace and heating coke from miscellaneous consumers and the usual business in foundry coke. The market remains quotable as follows: Spot furnace, \$2.90@3; contract furnace, \$3; spot foundry, \$4@4.50.

#### EASTERN OHIO

*Production Increases—Better Market Tone—Lake Outlook Improving Slowly—Prices Firm.*

Total output for the week ended Aug. 13, was 410,000 tons or approximately 66 per cent of rated capacity, which latter figure is placed at 625,000 tons. This is some 33,000 tons in excess of the previous week. Aggregate production of the field for the year to date is 10,753,793 tons, or 54 per cent of rated capacity.

Figures given out by the Pittsburgh Vein Operators' Association indicate that their mines worked 54 per cent of possible worktime during the week, as compared with 49 per cent the preceding week.

The main factors bolstering up operations are increased production for the railroads, which has taken on larger proportions during the past few weeks, and a continuation of Lake shipping from many of the mines. The output for railroad fuel account is running around 35 per cent of the total tonnage mined at this time.

There is greater activity in spot inquiries, especially from retail dealers and industries which have reached an improved point of convalescence in their recovery from the depression. Reports from Ohio industrial centers during the past week showed improvement in many lines and no doubt this is being reflected in a better demand for coal.

In the Lake cargo coal trade the situation is about the same as it has been for the past two weeks and it is not expected there will be much change during the balance of the month.

Boats are more plentiful than Lake cargoes and shippers say coal will not be sent forward any faster until there is a better movement from the Upper

Lake docks. Volume of Lake coal at lower docks is averaging around 13,000 cars per day.

Spot prices remain about the same as reported last week, with the possible exception of slack and screenings which have stiffened slightly. Domestic consumers are beginning to lay in their winter's supply at prices lower than those existing during the past year or so.

#### UNIONTOWN

*Only Slight Improvement Noted—Slack Coal in Good Call—Coke Market Dull.*

Continued dullness is trying the faith of operators who believed that something approaching normal business would make its appearance by September. While an improvement is noted in comparison with a month ago, the change is not as great as had been expected.

With the exception of an active demand for slack coal, understood to be from the cement mills, the coal market is virtually inactive, save for spasmodic sales of odd lots which are extremely spotty in character. The slack demand is offset to a large degree by the inability to move prepared sizes and the operator accepting a slack order has his choice of shipping the 3-in. size as steam coal or waiting for a market.

The coke market likewise is dull, although prices are firm. There are few indications of new business, although some inquiries are out for furnace coke, which however, appear to be of the bubble variety. Standard furnace coke has a firm quotation of \$3 with a \$2.90 figure for off-grades. Foundry has a wider range of \$3.75@4.25, with very little new business being closed.

#### UPPER POTOMAC

*Mine Idleness Continues—Spot Market Dormant—Prices Unchanged.*

There was no recovery from the prevailing mine idleness during the week ended Aug. 13, except along the upper Potomac at Thomas and Douglas. Even the better grades were not moving in any material volume and prices were at a very low level.

#### FAIRMONT AND PANHANDLE

*Production Unimproved but Inquiries Increase—Lake Tonnage Still Dropping—Tide Slow.*

##### FAIRMONT

Mine idleness increased during the latter part of the week ended Aug. 13, and production was limited to about 25 per cent of capacity. Increased interest in domestic coal was evident in local and Western markets, but little change was reported from Eastern points. Tidewater shipments were small as was the case with Lake tonnage. Domestic prices stiffened to as high as \$4@4.25, but mine run sold off \$1.40@1.65.

##### NORTHERN PANHANDLE

Aside from a few more inquiries for domestic sizes the spot demand was

negligible. Dwindling Lake shipments further cut the week's production, the output being placed at about 50,000 tons.

## Middle West

### MIDWEST REVIEW

*Domestic Market Shows Improvement—Steam Business Still Lagging—Industrial Future Uncertain.*

In the late spring, even the most pessimistic in touch with the coal market believed that conditions would be vastly improved by this time, but unfortunately this has not proved to be the case. Manufacturing continues at an exceedingly low ebb, and the general public, losing all thought of domestic coal, is going blandly on with no idea of a coal shortage this fall.

It appears, from first-hand reports from Iowa, Wisconsin, the Dakotas, and the Northwest in general, that the steam coal market is in as bad shape as it has been since the first of the year, and that is saying a great deal when one realizes that the great majority of steam coal sales since January have been at cost or below. The feeling of uncertainty as to the immediate future is more marked than it has been for some time.

The domestic trade in the Northwest has shown a little improvement, and we hear of a number of orders coming in from the agricultural section of that territory. Whether the recent cold snap has forced the public to think seriously of its coal supply, or whether the approaching fall has accomplished this, we do not know; but the fact remains that more domestic coal is moving and will probably move in greater volume from now on.

The industrial situation at the Head-of-the-Lakes is not particularly pleasant, as the iron mines are running only from six to eight days per month and having to put in storage most of the ore they produce. As the mining of iron ore and lumbering operations are the main industries in that section, it can very readily be seen that coal in these districts will only be purchased through absolute necessity.

#### INDIANA

*Spot Buying Still Sluggish, but Inquiries Increase—Some Labor Trouble—Prices Firm.*

Inquiries continue to be received, but the volume of actual orders is small. In the midst of a trying period the operators now are being confronted with much labor trouble. Most of this appears to be originating from a small group of radicals who are disgruntled at recent elections.

Prices remain unchanged. It is insignificant to note that some of the iron works which have been closed for some time are reopening, a very few at capacity production. The utility companies report less consumption than is usual at this period even under normal times.

Some of these have been building up reserves during the entire summer, but the general opinion is that they will attempt to operate on a shorter margin of coal than is usual.

Cooler weather has had some effect on the retail demand, but the summer prices have been unchanged and likely will not be until Sept. 1, or later.

#### WESTERN KENTUCKY

*Screenings Drop as Supply Grows—Domestic Prices Stronger—Production Still Low.*

Operators are having more trouble in disposing of their screenings, which have been in larger production as a result of increased domestic demand. Some screenings have been quoted at \$1 during the week, but mine run and lump are somewhat better, the highest market of the year being quoted on lump at \$3.75.

Production is not much better than two days a week due to the lack of demand for mine run. There is a little demand from retailers and jobbers as well as public utilities, but as a whole the market is quiet.

Fall business on prepared sizes is expected to be heavy, but this will probably result in over production of screenings, unless industrial activity shows a marked improvement. In the North and East consumption is not picking up materially, resulting in hard competition from all supplying fields in this district.

#### SOUTHERN ILLINOIS

*Some Improvement in All Sizes Except Nut and Screenings — Car Shortage Coming—Price Condition Still Bad.*

A better demand for Cartersville lump and egg has developed recently. Nut and screenings are not moving in proportion to these sizes. The condition is a peculiar one. Some mines are oversold on lump and are long on everything else, while other mines are sold up on egg and screenings, being long on nut and lump.

Working time averages one to four days. The railroad tonnage shows some increase. Car shortage is beginning to make itself felt in minor ways, and the number of foreign cars throughout the field has increased.

The larger operators are maintaining a price of \$4.05 on lump, egg and nut and others have cut the nut price. The market represents the independent prices, which range \$3.50 and upward on lump and egg, \$3 up on nut and from \$1.25 up on screenings, with slow movement of the latter. Mine run is not much in demand.

The Duquoin and Jackson County fields reflect the conditions in the Cartersville field, except that Jackson County shows some improvement in working time, also better prices than Duquoin.

The Mt. Olive field continues about the same. There is a little better movement of coal west and north, although steam is heavy and hard to move except

on contract. The St. Louis price on domestic sizes is \$3, and country figures are \$3.50@3.75.

The Standard situation shows little improvement. Screenings are still around \$1; 2-in. lump is \$2; 6-in lump is \$2.50 up, with an average of \$2.75; nut is \$2.50@2.75; steam egg is \$2.40@2.60, and mine run \$1.75@1.90.

Working time is from one to four days. Railroad tonnage showed some improvement the past week, but there are indications of car shortage in the very near future. St. Louis tonnage is light, the principal shipments going to country.

### Middle Appalachian

#### LOW-VOLATILE FIELDS

*Low Tidewater Prices—Production Not Yet Stimulated—Fall Inquiries Increase—Lake Market Sluggish.*

#### NEW RIVER AND THE GULF

Although some improvement was apparent, production in the New River field was still under 50 per cent of capacity during the week ended Aug. 13. Very little Tidewater coal was moved. Prices on prepared sizes were soft as yet, as low as \$4 in some instances, mine run did not range over \$2.25@2.50 and slack averaged \$1.75@2.25.

Lack of Tidewater and Eastern markets were not conducive to much activity in the Gulf region. Because of the slim demand, prices were very low, especially at Tide, where coal delivered at the piers was not bringing over \$5.50 per gross ton.

#### POCAHONTAS AND TUG RIVER

Pocahontas production showed signs of picking up with a better demand in evidence, the output being at the rate of about 50 per cent. Tidewater markets were still slow as the price was not sufficient to justify shipment. Requests for prepared quotations were growing in volume. There was no demand for slack worth mentioning.

Production declined during the week, the output not being greater than 55,000 tons. With both Tidewater and Lakes outlets practically closed it was necessary to curtail the output, mines being reduced to about half-time operation.

#### HIGH-VOLATILE FIELDS

*Better Line of Inquiry Develops—Production Still Low—Western Markets the Stronger—Tidewater Trading Dull.*

#### KANAWHA

There appeared to be a quickening of the spot market during the week ended Aug. 13, not only as to domestic coal but also for steam sizes and inquiries were on a larger scale. However, these did not produce much additional tonnage. Little prepared coal was being marketed and the stronger demand for slack was only because it was scarce. Most of the output was consigned to

Western points, little going to Lake or Tidewater.

#### LOGAN AND THACKER

A slight stiffening in demand in the Logan region did not materially change conditions and production was not improved. This was due to the fact that Logan companies which had been shipping heavily for storage had about reached the limit of those facilities.

Williamson production continued at the rate of about 40 per cent but with little coal being moved on spot orders. The N. & W. was taking a fairly large tonnage. There were no industrial disturbances during the week to retard production.

#### NORTHEASTERN KENTUCKY

There appeared to be a turn for the better during the week, inquiries being plentiful, especially among the retailers. Lake shipments were seriously curtailed by the accumulation at the lower docks.

#### VIRGINIA

Production was on about the same level as during the preceding weeks, with little coal being mined except on contract orders. Companies dependent on stray spot orders were not justified in resuming operations.

### Southern Appalachian

#### SOUTHEASTERN KENTUCKY

*Market Improving, Especially on Domestic—Steam Prices Holding.*

Movement of all grades continues to improve and operators and wholesalers are confident that a turn for the better has been reached. Domestic coal, of course, is moving more readily than steam, but so far prices are not being reduced further on steam.

Prices on block remain about the same, with a firmer tone. A deal has just been closed by one of the large operators for 30,000 tons of block for prompt shipment and other large deals are pending.

### West

#### UTAH

*Demand Only Slightly Improves—Fall Rush Seen—Production at Low Ebb.*

Those who thought the middle of August would see a big demand for coal have set another date for this desirable state of affairs. Dealers are storing to capacity and adding new yards to offset the certain winter rush. Prices remain firm.

Production figures for the first seven months of 1921 show that 2,007,548 tons were mined in Utah. The figures for the same period last year were 3,363,450 tons and for 1919, 2,308,592. In July 278,092 tons were produced. In July of 1920 the figures were a round half-million tons.





# MINE And COMPANY NEWS



## ALABAMA

A synopsis of Chief Mine Inspector Nesbitt's official report for 1920, on coal and coke production in Alabama, shows that the output of coal was 17,391,437 net tons, compared with 15,928,196 for 1919. A total of 3,982,472 tons of coke was made against the 1919 output of 3,397,748, thus showing an increase of 1,463,241 tons of coal and 584,724 tons of coke over the 1919 record. There were seventy-eight fatal accidents in the coal mines during the year, thirteen of which were due to a gas explosion. The tonnage per life lost was 227,967 and one for every 352 men employed. There were 295 mines in active operation for more or less of the time in 1920, against 178 in 1919.

## ILLINOIS

Among the mines located in the southern part of the state which have recently resumed operations are: **The St. Clair mine**, near Belleville, Superintendent George Grainger announcing that the main shaft has been retimbered, and that the mine will operate in the neighborhood of six days per week after being idle for from five to six weeks. **The Beatty mine**, at Mascoutah, has been opened, being idle since Feb. 22. **The Peabody Coal Co.** mine, near Springfield, has also been started once more.

The new mine of the **Southern Gem Coal Co.**, of Chicago, which is being rapidly completed, will be when finished one of the best and most modern mines in Perry County. Thomas Horn, one of the officials of the company, has charge of the construction.

The plan of dredging Big Muddy River up as far as Murphysboro and thence excavating canals over into Williamson and Franklin counties is again being agitated. C. T. Russel, of Murphysboro, a coal operator, is backing the plan, and if it goes through will be one of the most beneficial projects the coal mining industry of southern Illinois has ever known. With the increased river barge traffic during the last two years, it would be easy to ship coal from the mines via barges to the Mississippi, to St. Louis, New Orleans, Alton, Quincy, and to the many industrial districts in northern Illinois and Indiana, thus avoiding the trip by rail.

## INDIANA

In the suit of David Ellison against the **Lincoln Coal Co.**, filed in the Vanderburg County Circuit Court at Evansville, and taken on a change of venue to the Spencer Circuit Court at Rockport, a verdict was returned in favor of the plaintiff. C. C. Mason was appointed receiver for the company. The defendants' attorneys have announced they will appeal the case to the Supreme Court.

**Robert R. Williams**, manager of the **Indiana Tie Co.**, with headquarters in Evansville, has completed the work of taking up 1,300 acres of coal land just east of Winslow, in Pike County, situated along the Southern Ry., where Evansville capitalists, with whom he is affiliated, already own 2,000 acres of land. Williams will build a railway through the property and open one of the biggest stripping coal mines in Pike County.

## MINNESOTA

**The Northern States Coal Co.**, of Minneapolis, has been incorporated with a capital stock of \$100,000 by John F. Irwin, of Minneapolis; James O. Lund, of Mankato; E. B. Plocher, of Victoria and Chester H. Carpenter.

Docks of the **Pittsburgh Coal & Dock Co.** are reported in the best condition of any at Duluth-Superior Harbor. These docks have 35 per cent of the storage space left open, owing to the fact that they were entirely cleared before spring shipments began.

A decrease in assessment values was made recently to the city council of Duluth by the **Carnegie Dock & Fuel Co.**. The company contended that it had been over-assessed to the amount of about \$16,000, on the coal on docks. The total assessed valuation is about \$64,000. The reason for the over-assessment was that coal was valued at too high a figure, the company claimed. The city council denied the request for a reduction. It is thought that court action will follow.

## OHIO

**The Fox Coal & Clay Co.**, has been chartered with a capital of \$100,000, by W. B. Decker, S. H. Carrick and others. The concern will operate coal mines in the Crooksville district.

**The Hartsough Mining Co.**, of East Palestine, has been chartered to mine coal in the Tuscarawas field. The incorporators are T. C. Hartsough, Roy T. Hartsough, Elizabeth Hartsough, Mary Hartsough and John Moon.

**The Warwick Coal Co.**, of Coshocton, has contracted for one Marcus screen and shaker loading boom, together with refuse disposal machinery.

**The Scott Coal Co.**, of Midvale, have contracted with Jacobsen & Schraeder, Inc., of Chicago, for tippie equipment for their mine. Jacobsen picking tables, weigh basket, loading boom and conveyors will be installed.

## PENNSYLVANIA

While the coal shipments down the Monongahela River for the month of July showed a slight decrease over the month previous, there is every indication that August will see the tonnage figures again on the upgrade. Shipments of coke are now going forward regularly to the tin plate plant at Port Vue and the Monessen mills of the Pittsburgh Steel company. Six boats of the Carnegie Steel Co. are making regular trips towing byproduct coal to Clairton. The coal shipments for July were 791,345 tons, a decrease of 42,000 tons over the month previous.

The following coal companies have been granted charters by the Secretary of the Commonwealth, Harrisburg: **The Harris-Denly Coal Co.**, Exeter, capital \$30,000; purpose, mining and preparing, buying and selling coal. Incorporators: Charles T. Denly, Cleveland, Ohio, treasurer; William Harris and Isabella Harris, Forty Fort. **Perry & Co.**, Scranton, \$25,000; mining and preparing coal. Incorporators: Homer Nicholson, Scranton, treasurer; David R. Perry and E. M. Marshall, New York City. **The Scranton Fuel Co.**, Scranton, \$10,000; mining and preparing coal. Incorporators: M. J. Murray, Jr., Dunmore, treasurer; James J. Powell, Minooka and S. C. Vesey, Scranton. **Fidelity Fuel Co.**, Philadelphia, \$50,000; buying, selling and dealing in coal. Incorporators: Robert S. Feeney, Orange, N. J., treasurer; Samuel K. White, Narberth, and Sara G. Scanlan, Philadelphia. **Crescent Coal & Supply Co.**, Philadelphia, \$25,000; buying, selling and dealing in coal, feed, lime and cement. Incorporators: Francis J. Kelly, Philadelphia, treasurer; Thomas F. Slattery, Philadelphia, and John S. Roberts, Franklinville, N. J.

Two tracts of coal land in Green County have been sold to the **Piedmont Coal Co.**, of Pittsburgh for \$295,586.50 by Miss Maria Livengood and her sister, Mrs. Rachel Lynch.

A settling of the surface fourteen feet in diameter and about eight or nine feet deep occurred over workings of the **Gibbons Coal Co.**, in Scranton, recently.

## UTAH

The partnership existing between W. D. MacLean and T. G. Mays, as coal brokers, under the firm name of **MacLean & Mays**, has been dissolved. Mr. MacLean has been appointed general sales agent for the **Standard Coal Co.** Mr. Mays will be the Idaho representative of the company.

The Utah State Securities Commission is taking steps to extradite W. A. Williams, reported to be in Nevada, who is accused of misappropriation of funds in connection with the sale of stock of the **Mutual Coal Co.** Williams was first authorized to sell stock last April and he is charged with not remitting money collected.

## WEST VIRGINIA

Bloomington, Md. and Piedmont, W. Va., or the territory adjacent thereto, are to be the seats of operation of the **R. J. Ross Coal Mines, Inc.**, this company being capitalized at \$100,000. Interested in the new company are R. J. Ross, Sheridan Evans, Joseph P. Guy, of Westernport, Md.; L. R. Kight of Piedmont, W. Va.; Grant Harshbarger of Bloomington, Md.

A new conveyor, 800 feet in length, is to be installed by the **Pond Creek By-Product Co.**, of Williamson. This company is owned by the Norfolk & Western, the fuel from its mines being used to coal N. & W. locomotives.

Production has commenced at the plant of the **Belle Coal & Land Co.**, in the vicinity of Belle, recently completed, this operation being served by the K. & M. Ry.

Among improvements being made at the Sharon plant of the **Wyatt Coal Co.**, during the summer season is the construction of a new tippie, which is now nearing completion.

Since the **Kanawha White Ash Collieries Co.**, headed by E. M. Burns, of Ebensburg, Pa., was organized and took over a plant at Dorfee in Clay County, it has begun to make numerous improvements and will be able to materially increase the present capacity of 400 tons a day, much new equipment now being installed.

Announcement is made that the **Goodman Manufacturing Co.** will open a general repair shop in Charleston and it is stated that L. H. Harrison will act as the representative of the company in West Virginia.

W. P. Tams, Jr. and associates have purchased the holdings of J. T. Morris of the **Morris Smokeless Coal Co.** and have changed the name to the **Covel Smokeless Coal Co.** The post office of this company will be known as Morco, W. Va.

The Northern Pan Handle of West Virginia will be the seat of operations of the newly organized **Wills-St. Claire Coal Co.**, with general offices at Wheeling, this company having a capital stock of \$50,000. Having an active part in the formation of this company were: Wright Hugus, P. B. Lantz, George Cameron, Mabel E. Cameron and H. B. Scott, all of Wheeling.

The **Richland-Marshall Coal Co.** is driving a slope entry on a 25 degree grade (called the Mound slope) to connect up with the old workings of the Mound shaft mine at Moundsville. A six car trip rope haulage system with a six car rotary dump will be installed to handle 4,000 tons per day.

For a consideration of \$1,500,000 the **Penn American Coal Co.** has purchased 7,000 acres of coal in Brooke and Ohio counties, from James A. Paisley, of Cleveland, according to announcement by the West Penn Power Co. The Penn American company is owned jointly by the West Penn system and the American Gas & Electric Co., of West Virginia. The coal will be used to supply the power company's Windsor plant.

The **Virginia Big Vein Coal Co.** is the name of a new concern organized under the laws of the State of West Virginia, although the company, for the time being at least, will have its headquarters at Cumberland. This company has a capitalization of \$50,000. Principals are W. S. Davenport, S. B. Jeffries, C. A. McDowell, all of Thomas; W. S. Cunningham and C. E. Hetzer, of Cumberland, Md.

The **Nordlaw Coal Co.** has been organized with a capital of \$25,000, with a view to operating in Harrison County, Clarksburg to be the general office of the company. Active in effecting the preliminary organization of this company were: Charles Waldron, Jr.; J. H. Starr, O. V. Oliver, J. S. Reid, Guy H. Burnside, all of Clarksburg.

## Traffic News

In the Indiana rate case, the commission says the evidence on further hearing does not warrant modification of its previous order involving rates on coal intrastate in Indiana for distances of less than 30 miles.

**Officials of the Chesapeake & Ohio, Big Four and Baltimore & Ohio railroads** have been inspecting branch lines in the Louisville district.

The Interstate Commerce Commission has decided that the increased interstate rates on coal shall apply to the State of Kansas, in deciding the Kansas rate case in which the Kansas authorities refused to apply the increased interstate rates to State hauls. In consideration of the case the following coal companies appeared: **Pittsburgh & Midway Coal Co., Clemmons Coal Co., Sheridan Coal Co., Domestic Fuel Co., Perry Coal Co., U. S. Coal Co., Western Coal & Mining Co., the Weir Coal Co. and the Southwestern Interstate Coal Operators' Association.** The Kansas Court of Industrial Relations allowed the following increases in coal rates: 15c. a ton where the rate was not above \$1.20c. where the rate was from \$1.01 to \$1.50, 25c. where the rate was from \$1.51 to \$2.30c. where the rate was from \$2.01 to \$2.50, 35c. where the rate was from \$2.51 to \$3 and 40c. where the rate was \$3.01 or higher, instead of the flat percentage increase authorized by the Interstate Commerce Commission. In its decision, the Commission says that one of the most serious instances of disparity in rates is found in coal which is produced in southwestern Missouri and southeastern Kansas. Some years ago there was a slight differential in favor of the Kansas mines, which in 1915 was increased by failure of the Kansas authorities to grant the same increases as the I. C. C. had granted, but since 1918 mines on both sides of the State line have been treated as a unit from a rate standpoint; that is, to a given point in Kansas, the same rate applied from Kansas mines as from Missouri mines, but since the 1920 I. C. C. rate increase Kansas operators have had a rate advantage of 12.5c@75c. a ton, dependent upon destination, due to failure of the State to apply the increased rates. On coal from Pittsburgh to Hutchinson, Kan., the Commission says there is an intrastate rate of \$2.40 a ton, yielding 11.1 mills per ton mile, which is cited in comparison with the rate of \$2.16 from Henrietta, Okla. to Neodesha, Kan., 230 miles, yielding 9.4 mills per ton mile. A rate of \$1.85 per ton on coal from Springfield to Chicago, 185 miles, yielding 10 mills per ton mile is compared with the rate of \$2.05 per ton for a similar haul from Pittsburgh to Wichita, yielding 10.7 mills per ton mile.

Announcement was made on July 29, following a two-day meeting of traffic executives of Eastern roads, that a reduction of 5c. per hundred pounds would be made by Eastern railroads in export rates for wheat, corn and rye from Buffalo, Erie and Fairport to Eastern export points. A reduction of 3c. per hundred in export rates on barley and oats was agreed upon at the same time. The reduction in wheat, corn and rye rates amounts to about 25 per cent. Present export rates from Lake points to New York are: wheat, 20.17c.; corn and rye, 19.79c.; oats, 19.63c.; barley, 20.08c. per hundred pounds. The roads will preserve the usual port differentials.

In the complaint of the **Slogo Coal Corporation** and the **Perry County Coal Corporation**, involving rates on coal from Johnson City and O'Fallon City, Ill., to Illinois and other destinations, the I. C. C. has authorized the Central Illinois Coal Traffic Bureau to intervene.

## Personals

A business visitor in the Pittsburgh field during the latter part of the month was **George Rodgers**, of the Mon-Scott Fuel Co.

**Stephen F. Elkins**, of the Elkins Fuel Co., with headquarters at Morgantown, made Pittsburgh and Uniontown, Pa., his Mecca during the latter part of July.

**Alex G. Bonnyman**, president of the Blue Diamond Coal Co., of Tennessee, has left for a two months' vacation in Europe.

Kentucky visitors to the Cincinnati market recently were: **T. C. Hughes**, Kentucky Collieries Co., Pineville; **C. L. Logan**, of

the Four Seams Block Coal Co., Hazard, and **T. G. Jack**, of the Defiance Coal Co., Defiance.

A visitor in the Huntington market during the first part of August was **W. K. Thurmond**, president of the Logan Coal Operators' Association, Mr. Thurmond giving his attention to association affairs while at Huntington.

**J. W. White**, sales manager of the Cleveland Cliff Iron Co., has returned to his office at Cleveland, Mr. White having been in the Logan field during the latter part of July visiting the mines of this company at Ethel.

The Twin States Fuel Co. was represented in the Carolinas during the latter part of July by **Tom Holtzman**, assistant sales manager of the company.

**R. P. Maloney**, general manager of the Davis Coal & Coke Co., was in Charleston, W. Va., recently.

**J. R. Evans** is now representing the American Export and Inland Coal Corporation of Huntington. Mr. Evans was formerly an operator on Coal River.

**Roy H. Cunningham**, general sales agent of the Twin States Fuel Co., has been in Western markets for several weeks.

**Boyd Smith**, of Elkins, traveling representative of the West Virginia Coal & Coke Co., has been confined to a Battle Creek sanitarium for several weeks, suffering with nervous trouble.

**C. M. Loeser**, traffic manager of the Elkhorn-Piney Coal Mining Co., with headquarters at Huntington, was a recent visitor in the Cincinnati market.

**Everett Drennen**, president of the West Virginia Coal & Coke Co., spent part of the second week of July at White Sulphur, enjoying the golf links there.

**C. C. Beury**, one of the prominent operators of the New River field, with headquarters in Charleston, was at White Sulphur Springs, attending a meeting of the Smokeless Coal Association of West Virginia.

**C. E. Cowan**, chief engineer of the Jamison Coal & Coke Co., with headquarters at Greensburg, Pa., was a visitor in the Fairmont region on July 19, spending the day there looking over the mines operated as a part of the West Virginia division of the company.

**J. R. Blackburn**, who has an important executive post with W. H. Bradford & Co., spent several days in the Somerset field toward the end of July.

## Industrial News

**Boston, Mass.**—The Cochrane Steam Specialty Co. has been organized to represent in New England a number of well-known manufacturers of power plant equipment. The office, which is in charge of Elliott Greene, is located at 1045 Oliver Building.

**Cincinnati, Ohio**—The Harlan Coal Co., headquarters at Louisville, has opened a local office in the Union Central Building.

**Cincinnati, Ohio**—**J. M. Humphrey**, who was with the Walter Bledsoe Co. of Indianapolis, as manager of the Cincinnati office, has branched out for himself under the firm style of **J. M. Humphrey Coal Co.**, with offices at 2511 Union Central Building.

**Cleveland, Ohio**—The office of the Sullivan Machinery Co. has been moved to Room 824, Kirby Building. **Ralph T. Stone** is manager.

**Milwaukee, Wis.**—An Industrial Advertising Conference is planned at the annual meeting of the Associated Clubs in Milwaukee in 1922. The Engineering Advertisers' Association of Chicago, led by **Keith J. Evans**, of the Jos. T. Ryerson Sons Co., has already adopted resolutions and outlined a tentative program and **W. A. Wolff**, of the Western Electric Co., president of the Technical Publicity Association of New York, also plans to call a special meeting soon for the purpose of taking action on the conference idea. Both organizations have a large membership representing the leading industrial advertisers and associated interests in their respective cities. Leaders in other large cities are also taking an active interest, and it is probable that additional groups will be organized in the near future.

**Pittsburgh, Pa.**—**Luria Brothers Co.**, with main office in Reading, Pa., has added a rail department to the Pittsburgh branch, under management of **E. Davidson**.

**Terre Haute, Ind.**—The Sullivan Machinery Co. announces the establishment of a supply depot and service station for coal mining machinery supplies and repair parts at 7th Ave. and 13th St., with **H. T. Wiley**, formerly of the Engineering Department at the Claremont, New Hampshire Works, in immediate charge.

## Obituary

**J. Frank Brown** died in Altoona, on Aug. 5, 1921. Mr. Brown was a brother of **Henry G. and Medford J. Brown**, of the Maryland Coal & Coke Co. and was in charge of the company's field work in Pennsylvania and of mining operations in Clearfield County.

**John L. Cochrane**, statistician, for many years of the United States Bureau of Mines, died in Cleveland, Aug. 3. Mr. Cochrane's death came suddenly, following his gradual apparent recuperation from a paralytic stroke which occurred in January. The deceased had been in the Federal service in Washington for about fourteen years, first with the Technologic Branch of the United States Geological Survey, and later with the Bureau of Mines.

**James B. Corrigan**, prominent and widely known coal man, died recently at his home in Chicago. At the time of his death he was with the Reeves Coal and Dock Co., but had worked for the last nine years with the W. P. Rend Co., of Chicago.

## Coming Meetings

The **Huntington Coal and Industrial Exposition** will be held in the Chamber of Commerce Building, Huntington, W. Va., Sept. 19 to 24 inclusive. Chairman of committee, **Thomas A. Palmer**, Huntington Chamber of Commerce, Huntington.

**American Institute of Mining and Metallurgical Engineers** will meet at Wilkes-Barre, Pa., Sept. 12 to 15. Secretary **F. F. Sharpless**, 29 West 39th St., New York City.

**National Association of Cost Accountants** will hold its annual convention at Cleveland, Ohio, Sept. 14, 15 and 16. Secretary, **S. C. McLeod**, 130 West 42d St., New York.

The **American Mining Congress and National Exposition of Mines and Mining Equipment**. The twenty-fourth annual convention on Oct. 17 to 22 at the Coliseum, Chicago, Ill. Assistant secretary, **John T. Burns**, Congress Hotel, Chicago, Ill.

The **West Virginia-Kentucky Association of Mine, Mechanical and Electrical Engineers** will hold its annual meeting at Huntington, W. Va., on Sept. 20 to 23. Secretary-treasurer, **Herbert Smith**, Huntington W. Va.

**New York State Coal Merchants' Association, Inc.** will hold its annual convention at Richfield Springs, N. Y., on Sept. 8, 9 and 10. Executive secretary, **G. W. F. Woodside**, 250 Arkay Bldg., Albany, N. Y.

**Canadian Institute of Mining and Metallurgy** will hold its annual Western meeting at Edmonton, Alberta, Canada, Sept. 14, 15 and 16. Convention secretary, **T. B. Williams**, 10,610 83d Ave., Edmonton, Canada.

**American Manufacturers Export Association** will hold its twelfth annual convention at the Waldorf-Astoria, New York City, Oct. 5 and 6. Secretary **A. W. Willmann**, 160 Broadway, New York City.

**National Safety Council** will hold its annual congress at the State House, Boston, Mass., Sept. 26 to Sept. 30 inclusive. Secretary, **S. J. Williams**, Chicago, Ill.

The **Coal Mining Institute of America** will hold its annual meeting at Pittsburgh, Pa., Dec. 7, 8, and 9. Secretary **H. D. Mason, Jr.**, Chamber of Commerce Bldg., Pittsburgh, Pa.

An **Industrial Relations Conference** for all industries in the State of Pennsylvania has been arranged for October 24 to 27 at Harrisburg, Pa., by the Commissioner of Labor and Industry, **C. B. Connelly**.

The sixth annual convention of the **National Association of Purchasing Agents** will be held Oct. 10-13 at Indianapolis, Ind.

**International First-Aid and Mine Rescue Meet.** Sixth annual event will be held at St. Louis, Mo., Sept. 1, 2, and 3, under the auspices of the U. S. Bureau of Mines and the Red Cross.